

**Organizational Performance and Excellence of Dubai Police:  
Role of Total Quality Management and Enterprise Resource  
Planning**

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**Organizational Performance and Excellence of Dubai Police: Role of Total  
Quality Management and Enterprise Resource Planning**

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**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
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## ABSTRACT

The main purpose of this study was to investigate the mediating effect of organizational excellence (OE) on the relationship between total quality management (TQM), enterprise resource planning (ERP), entrepreneurial orientation (EO), and organizational performance (OP). At the same time, it also investigated the mediating effect of entrepreneurial organizational culture (EOC) on the relationship between EO and OP. The motivation for this study was driven by the inconsistent findings in the literature concerning the relationships between TQM, ERP, EO, and organizational performance. Due to the inconsistent results, a new research has emerged and this has prompted further investigation on the effect of other variables that may better explain the nature of these links. In the related literature, many theories have suggested that the compatibility between strategies, resources, and capabilities as the keys for success. To achieve this purpose, this study has integrated different theories such as the resource-based view, knowledge-based view, and the innovation theories in order to provide the effect of OE and EOC on successful strategy implementation. Questionnaires were distributed to 565 Sections of the Dubai Police. 355 questionnaires were returned and used in the analysis using the PLS-SEM. The results of this study revealed that TQM, ERP, and EO were positive and have also been proven to be significant predictors of organizational performance. More importantly, the results have also confirmed the mediating effect of organizational excellence on the relationships between TQM, EO, and organizational performance. This study also supported the premises of the resource-based view theory, the knowledge-based view theory, and the innovation theory by reaffirming the importance of the supportive OE and EOC for any successful strategy implementation in enhancing organizational performance through the implementation of innovative practices.

**Keywords:** total quality management, enterprise resource planning, organizational excellence, Dubai police.

## ABSTRAK

Tujuan utama kajian ini adalah untuk meneliti kesan pengantara kecemerlangan organisasi (OE) dalam hubungan antara pengurusan kualiti menyeluruh (TQM), orientasi keusahawanan (EO), perancangan sumber perusahaan (ERP) dan prestasi organisasi (OP) pada satu sudut, dan budaya organisasi keusahawanan (EOC) dalam hubungan antara EO dan OP pada sudut yang lain. Motivasi untuk menjalankan kajian ini didorong oleh penemuan yang tidak konsisten dalam literatur mengenai hubungan antara TQM, ERP, EO, dan prestasi organisasi. Oleh kerana keputusan yang tidak konsisten, telah wujud satu kajian baharu yang mencadangkan penelitian terhadap kesan pembolehubah lain yang mungkin boleh menjelaskan dengan lebih baik tentang sifat hubungan ini. Dalam literatur yang berkaitan, banyak teori telah mencadangkan kesesuaian antara strategi, sumber, dan keupayaan sebagai kunci pertama untuk berjaya. Untuk mencapai tujuan tersebut, kajian ini mengintegrasikan teori-teori yang berbeza seperti pandangan berasaskan sumber, pandangan berasaskan pengetahuan, dan teori-teori inovasi untuk mengkaji kesan OE dan EOC dalam kejayaan pelaksanaan strategi. Soal selidik telah diedarkan secara rawak kepada 565 Seksyen Polis Dubai. 355 soal selidik telah dikembalikan dan dianalisis menggunakan PLS-SEM. Keputusan kajian ini menunjukkan bahawa TQM, ERP, dan EO adalah peramal yang positif dan signifikan kepada prestasi organisasi. Lebih penting lagi, keputusan juga mengesahkan kesan pengantara kecemerlangan organisasi dalam hubungan antara TQM, EO, dan prestasi organisasi. Kajian ini menyokong premis teori berasaskan sumber, teori berasaskan pengetahuan dan teori inovasi dengan mengesahkan kepentingan sokongan OE dan EOC untuk mana-mana pelaksanaan strategi yang berjaya dalam meningkatkan prestasi organisasi melalui pelaksanaan amalan inovatif.

**Kata kunci:** pengurusan kualiti, menyeluruh perancangan sumber perusahaan, kecemerlangan organisasi, polis Dubai.

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## LIST OF ABBREVIATIONS

CAE	Canadian Awards for Excellence
CSFs	Critical success factors
DA	Deming Award
DQA	Dubai Quality Awards
EO	Entrepreneurial Orientation
EOC	Entrepreneurial Organizational Culture
EQA	European Quality Award
ERP	Enterprise Resource Planning
HRM	Human Resource Management
JQA	The Japan Quality Award
MBNQA	Malcolm Baldrige National Quality Award
OC	Organizational Culture
OE	Organizational Excellence
OP	Organizational Performance
PLS	Partial Least Square
PMQA	Quality Awards in Malaysia
SEM	Structural Equation Modeling
SMEs	Small and Medium Sized Enterprises
SPSS	Statistical Package for Social Science
TQM	Total Quality Management
UKQA	United Kingdom Quality Award

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction**

This chapter introduces the research of the study. It presents the background of the study, highlighting the motivation and discusses the managerial as well as the theoretical issues. In addition, this chapter presents the research questions and research objectives developed in the light on the problem and the theoretical gaps identified. The significance of the study was presented in the chapter and scope of the study was clearly explained.

#### **1.2 Background of the Study**

Measurement of performance is very important for effective management in any organization (Demirbag, Tekinus, & Zaim, 2006). Deming (1986) argued that improvement of any process cannot be done without measuring its outcomes. Therefore, the organizational performance improvement needs some measurements to determine the extent of effectiveness of organizational recourses on business performance (Gadenne & Sharma, 2002; Madu, Kuei, & Winokur, 1996). Kanji and Sa (2007) pointed out that the first condition to enhance performance and achieve organizational excellence is to develop and implement a performance measurement system. Traditionally, financial indicators have been used to measured organizational performance that have some

shortcomings, however, to overcome these shortcomings some authors added non-financial indicators to the traditional measuring systems (Demirbag *et al*, 2006).

In today's business changing environment, organizations require to evaluate their external and internal environment for opportunities and challenges in order to remain competitive and sustain their growth (Ramlall, 2002). In such environment, organizations in order for them to grow and survive have to seek excellence by leading the innovation. In addition, organizations either in private or public sectors are seeking to improve their performance and achieve competitive advantage over competitors, however how this performance can be enhanced and what strategies that should be implemented towards that, is still the issue that needs to be further investigated.

To achieve an enhanced organizational performance, strategic management is considered as one of the most important factor and it is also the most commonly studied approach in the field of organizational behavior (Chen, 2005). Strategic management is the process of examining current and future environments, initiating the objectives of organization, implementing and controlling decisions to achieve organizational objectives (Adeleke, Ogundele, & Oyenuga, 2008). In addition, strategic management is how to deploy strengths and weakness of the firm to gain the advantages of its external opportunities and minimize its external problems/threats (Adeleke *et al.*, 2008). Moreover, it refers to the managerial decisions made by the firm to cope with the daily changing environment in order to improve short and long term performance (Stake & Grigsby, 1997). Furthermore, implementation of strategic management has a positive impact on profitability of the organization, and a positive relationship with a market share (Dauda,

Akingbade, & Akinlabi, 2010). Dauda *et al.* (2010) pointed out that some recent studies about strategic management by Oyedijo and Akinlabi (2004 & 2008), Akingbade (2007), and Nmadu (2007) have confirmed the effect of strategic management on corporate performance.

In relation to the strategic management, basic distinctions do exist between the public and private sectors, and they are critical to understanding differences in strategic management processes (Ring & Perrys, 1985). In addition, strategic management was found to develop and transform the bureaucratic public sector to be more responsive and innovative (Osborne & Gaebler, 1992). Moreover, there is a difference between public and private sector in business practices; however private sector practices can be applied in the public sector (Galloway, 1994).

Performance of public and private sectors is different according to their goals and core businesses. While private sector intends to achieve profit through satisfying their customers; public sector intends to achieve quality, customer satisfaction, and good performance. The main goal of any public organization is to satisfy the needs of its society within available budget and ability (Dewhurst, Martinez-Lorente, & Dale, 1999). However, public organizations have different intangible goals and objectives in nature than those of the private organizations (Cinca, Molinero, & Queiroz, 2003).

In the last twenty years, improving the government performance has been the mainstream of public administration research and policy (McBride, 2008). Governments around the world are searching for improving their performance in terms of program outcomes, use of public resources, citizen participation, customer satisfaction, strengthen integrity,

transparency, combat and prevent corruption, and accountability (Ashour, 2004). Ashour (2004) also pointed out that this reform is important and crucial to enhancing the performance of public sector organizations, protecting public performance, and strengthen the government's role in providing basic services and development. In addition, he pointed out that these reforms in the public sector require enhancing its effectiveness and efficiency.

In relation to that, De Waal (2010) mentioned that the government can enhance their performance if it focused on improving the following:

- Identifying the profile of an excellent public sector manager.
- Strengthening the resoluteness of management.
- Excelling in the core competence of public sector organizations.
- Improving the performance management process of the organization.
- Improving process management within the organization.
- Increasing the quality of the workforce.

Furthermore, De Waal (2010) argued if management in public organizations seriously applies and works on the above mentioned themes, an excellent public organization will be generated that will be ready for future challenges. Accordingly, new ways to improve government organizational performance are needed.

However, organizations have been keen to implement innovative strategies to excel in business and position themselves differently from their competitors. It has been widely acknowledged that not all the strategic implementations are fruitful. Organizational

strategy implementation has been investigated by Kaplan and Norton (2000) where they reported that 70 to 90% of organizations experienced failure organizational strategic implementation worldwide.

The main objective of the strategic management and innovative strategy implementation is to achieve the organizational excellence. Practically, business excellence supports the organizational capacity to accept and deal with any change (Oakland Consultation, 2005). Additionally, Oakland Consultation (2005) pointed out that business excellence requires managers to have obvious vision that will lead the organization to achieve its objectives with delivering value and managing organizations for customers and stakeholders. It is great to mention that excellence is the highest and outstanding performance level (Antony & Bhattacharyya, 2010); therefore any organization should concern further in its performance. In other words, to achieve the high performance record, nowadays, many organizations have been struggling to achieve organizational excellence so that they can differentiate themselves in the market from their rivals. Unfortunately, many of them failed to achieve this goal because the lack of understanding of the business excellence concepts and processes (Dahlgaard, 2003).

The term organizational excellence has recently appeared and emerged to be the same as business excellence with the difference that it is more used to public sector organizations (McAdam, 2000). Organizational excellence in current literature defined as an aim point on the quality journey (McAdam, 2000).

Different organizations have different plans regarding the strategies that can help them to enhance their goals. In general, Total Quality Management (TQM), Enterprise Resource

Planning (ERP) systems, and Entrepreneurial Orientation (EO) are among the most important strategies to enhance the organization positioning in the market. TQM has been considered as one of the most commonly important management philosophy. It is a modern term however its historical roots going back a long time (McAdam, 2000). In fact, TQM has been defined as a systematic and global approach to organization management by process and continuous improvement of business performance to satisfy explicit and implicit anticipation of customers and stakeholders (Dean & Bowen, 1994; Grant, Shani, & Krishnan, 1994; Shiba, Graham, & Walden, 1993). Thus, the organization's purpose is not to have TQM but to adopt it to achieve excellence and to contribute in achieving competitive advantage (Mele & Colurcio, 2006).

TQM is taken into account because of the numerous studies confirmed its influence on performance and excellence. Kumar, Kumar, Grosbois, and Choisne (2009) pointed out that the success of TQM in improving firm's performance lies in its intangible and behavioral features. Essentially, intangible resources can be considered more important than tangible resources to the organization's effectiveness and success (Al-Swidi & Mahmood, 2011). Many of the goals and objectives of public organizations, many of the resources they use, and many of the outputs they generate are intangible (Cinca *et al*, 2003). They also argued that good management of intangible assets ensures the achievement of goals and objectives.

According to Khamalah and Lingaraj (2007) quality is a prerequisite for any firm and business to survive and delight its customers. TQM is an integrated management philosophy that aimed to continuous improving of quality and to achieve customer

satisfaction (Karuppusami & Gandinathan, 2006). TQM is a source of competitive advantage (Douglas & Judge, 2001; Hackman & Wageman, 1995; Powel, 1995). In addition, there was much more effort in the past two decades in understanding the TQM practices that leads to high quality and the whole business performance (Feng, Prajogo, Tan, & Sohal, 2006). Moreover, TQM found its way to public sector (Brandmuller, 2009). In 1980, there were many criticisms about the public organization functioned and managers about looking for private sector's solution (Brandmuller, 2009). TQM is a new phenomenon in the Arab World, and most of studies in UAE on TQM have been theoretical, descriptive, and speculative (Al-Marri, Ahmed, & Zairi, 2007). We have here to mention, in spite of the importance of TQM for organizational excellence and performance, the findings in the literature regarding this link is still inconclusive.

Some authors such as Dowe, Samson, and Ford (1999), Powell (1995), and Huarng and Chen (2002) suggested that TQM practices can be varied from country to another country (Jabnoun & Sedrani, 2005). In addition, there are numerous authors who suggested the need for deeper investigations of the relationship between TQM and organizational performance to bridges TQM and organizational theory relationship (Dean & Bowen, 1994; Hackman & Wageman, 1995; Sitkin, Sutcliffe, & Schroeder, 1994; Sousa & Voss, 2002; Spencer, 1994; Terziovski & Samson, 2000; Waldman, 1994). In addition, many organizations still implement and adopt TQM in the increase change globally (Ehigie & McAndrew, 2005).

Other studies analyzed the effect of TQM on performance in the long run (Easton & Jarrell, 1998; Hendricks & Singhal, 1997, 1999). However, there are few studies analyzed the causal link between TQM and performance (Corredor & Goni, 2010).

Another initiative to enhance the organization excellence and performance is the adoption of the ERP systems as the integrated systems that help the overall organizational performance. Huang and Palvia (2001) pointed out that ERP systems are excessively used in developed countries; however, in developing countries, it is still in its early stages.

Poston and Geabski (2001) pointed out that the first empirical analysis of ERP performance "ERPS adoption" as the only independent variable, after that as pre and post-adoption when comparing to the organization performance. According to Bhatti (2005) that there are some reasons behind failure of ERP like the poor selection of ERP systems and vendor, lack of support of top management, and resistance of employees.

Most of failure of ERP implementation, according to some studies finding, in financial performance aspect, therefore, Shad, Chen, and Azeem (2011) considered an ERP as the most important and critical area especially in public sector organizations where operational efficiency and cost effectiveness is more prioritized on profits.

The term "entrepreneurial orientation" (EO) is considered a very significant factor that leads to excellence and performance. It refers to a strategy making process of the firm that engages in different entrepreneurial activities in an organization (Lumpkin & Dess, 2001). Lumpkin and Dess (1996) suggested a popular model of the EO that contains five

dimensions: risk taking, innovativeness, autonomy, proactiveness, and aggressiveness. Some earlier theoretical studies suggested a contingency framework that explores the relationship between organizational performance and entrepreneurial orientation (Lumpkin & Dess, 2001).

Lumpkin and Dess (2001) mentioned that the proactiveness and competitive aggressiveness dimensions of EO have been less investigated in the literature of entrepreneurship, especially their relation to innovativeness and risk taking. Therefore, they suggested additional research studies on EO dimensions like innovativeness and risk taking. Also, Andersen (2010) mentioned that there are several weaknesses in previous research, so other researchers should adopt more cautious approach. Miller and Breton-Miller (2011) argued that most studies of EO are about small firms and rely on the executives' opinions. Furthermore, other authors argued that the EO field needs more researches to examine the characteristics of the organization's strategic management process that might influence the relationship between performance and EO (Barringer & Bluedorn, 1999; Covin *et al.*, 2006; De Clercq, Dimov, & Thongpapanl, 2010; Lumpkin & Dess, 1996; Miller & Friesen, 1982; Wiklund & Shepherd, 2003). Tang, Tang, Zhang, and Li (2007) suggested expanding research on the EO-performance relationship in other transitioning and emerging economies. Practitioners and scholars associate the EO of a firm with private and individual business firms (Covin & Slevin, 1986; Entebang, Harrison, & Run, 2010; Zahra, 1986); therefore there is a need to expand research of EO-performance relationship with public organizations (Caruana, Ewing, & Pamaseshan, 2002).

To ensure a successful strategy implementation, there must be a supportive organizational culture. Organizational culture refers to some set of values and meanings that employees of an organization have (due Hilal, Wetzel, & Ferreira, 2009). The importance of organizational culture is very high when implementing TQM or ERP. It is very crucial when applying any new application or practice due to employees' resistance to change. Moreover, creating entrepreneurial organizational culture among organizations' employees is highly important to impact positively while practicing TQM and ERP.

The term entrepreneurial organizational culture (EOC) has been coming as a result of joining entrepreneurial organization and organizational culture in which innovation, flexibility, open communication, mutual trust, and other lineaments of entrepreneurship are raised and identify it as an entrepreneurial organizational culture (Duobiene & Pundziene, 2007). EOC is considered as a prerequisite for corporate entrepreneurship, discloses by people communication, and a fertile base for entrepreneurial activity of employees (Gibb, 1988; Kuratko, Ireland, & Hornsby, 2004; Morris, Kuratko, & Covin, 2008).

In addition to that, the concept of EOC has been presented by Cornwall and Perlman (1990) 20 years ago, but it is still unused further (Duobiene & Pundziene, 2007). Furthermore, there has been a lack of literature regarding the entrepreneurial organizational culture (Basso, Fayolle, & Legrain, 2008). Therefore, previous research has suggested the investigation of the link between entrepreneurial activity and culture (Kreiser, Marino, Dickson, & Weaver, 2010), and how culture affects entrepreneurial behavior (Zahra, Jennings, & Kuratko, 1999). However entrepreneurial orientation (EO)

as a culture in an organization has been long suggested as a necessary feature of high-performing organizations (Covin & Slevin, 1991; Lee & Peterson, 2000). Previous quantitative studies of culture received a criticism of lacking the support of using the mathematical indices to measure it (Osoba, 2009).

Organizations do not develop in a vacuum but they must attract a wide variety of drawing in capital, resources, customers and suppliers to create cooperative and supportive networks (Schute & Mayer, 2004). This means that public managers are required to anticipate and respond quickly to the changing environment around their organizations. Thus, they should follow the modern terms and techniques that will help them to satisfy customers and suppliers. The governments all over the world are responsible to create and maintain a secure and attractive business environment for local and foreign investors alike. Therefore, the governments are so much concerned in developing and maintaining effective and efficient police systems.

More specifically, Police as one of public organization moved from the traditional model of policing to that of the contemporary-community policing (Scheider, Chapman, & Schapiro, 2009). Many police departments have shifted their policing philosophy to a community problem-oriented (Brown & Brudney, 2003). It has been argued by Brown and Brudney (2003) that objectives stimulate productivity, effectiveness, and performance, therefore, police organizations across the country are implementing information technology to upgrade officers into problem solvers and to influence their intellectual capital to be proactive in fighting crimes. UAE is one of the most attractive counties in the Arab region. An increasing rate of Foreign Direct Investment (FDI) inflow

has been witnessed every year. Therefore, it is one of the main duties of the Dubai government to ensure a safe and secure business environment. Dubai Police (DP) is one of the main players in this aspect. Towards this end, Dubai police has changed its vision and objectives from the traditional role of police departments to community and responsibility policing. In other words, DP seeks to play a very important role in developing and performing society, and gained honorable reputation among other police departments not only in the Middle East region, but around the world. Moreover, Dubai police was the first Public department in the region to apply TQM practices. Additionally, the Dubai government has realized the importance of using information technology, in general, and ERP in particular, so it implemented ERP in all its departments since 2003. The implementation of the system has been launched gradually by involving only four departments at the beginning. Now, 45 departments in Dubai Government are using ERP that purchased from Oracle Corporation. Thus, Dubai police has been practicing the most advanced technology and seeking innovative strategies to enhance its performance.

However, the improvement witnessed in the performance of the Dubai Police, the performance is not satisfactory when compared to the indicators of performance. Figures 1.1, 1.2, 1.3, and 1.4 show some indicators that reflect the performance of DP such as the institutional evaluation report, accidents, and crimes. These indicators indicated that the performance of DP needs more improvement to align with the strategic plan of Dubai Government.

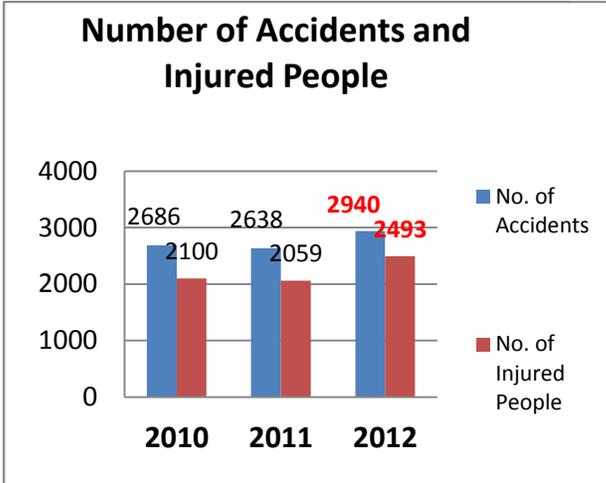


Figure 1.1  
*Number of Accidents*  
 Source: Dubai Police Website



Figure 1.2  
*Number of Criminal Cases*  
 Source: Staistical Year Book 2012

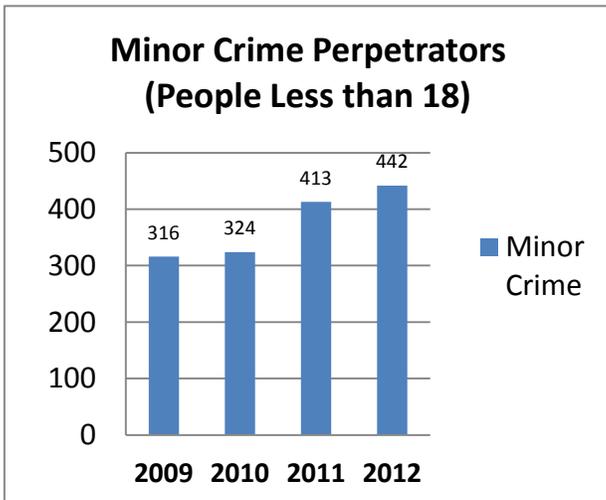


Figure 1.3  
*Minor Crimes*  
 Source: Staistical Year Book 2012

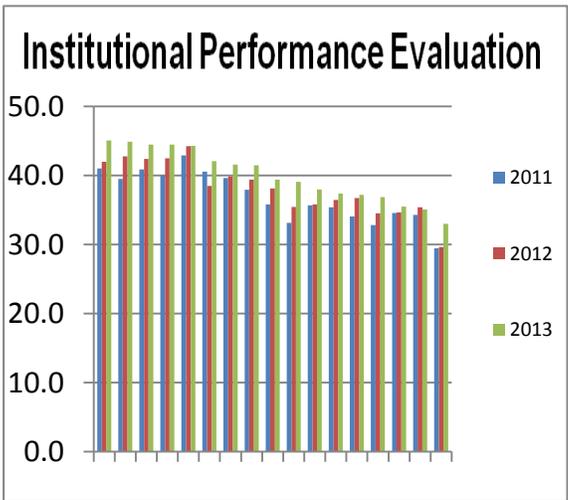


Figure 1.4  
*Institutional Performance Evaluation*  
 Source: Dubai Police

### 1.3 Problem Statement

Excellence is a broad word that refers to the high record of performance in all the organization’s operations aspects. It has been argued by Dahlgaard-Park (2009) that it is

difficult to know when you can attain excellence if you don't know what it is. In the literature of organizational and humanity studies, it is more related to "business" or "organizational". However, they are leading to the same meaning with the difference that organizational excellence used more in public sector organizations and business excellence used more to private sector organizations (McAdam, 2000). An organizational excellence is a holistic approach that improves performance of the organization (Harrington, 2005) and related to outstanding performance (Hassan & Kanji, 2007). According to EFQM, organizations those have 60 percent or above in performance value are considered as excellent values where values between 50 to 60 percent is considered moving towards excellence whereas below 50 percent is considered as not excellent.

In relation to that, Reed and Lemak (2000) pointed out that there has been an ongoing debate regarding the effectiveness of excellence towards creating competitive advantage. Nowadays, many organizations are struggling to achieve organizational excellence, however many initiatives have failed to achieve this goal due to the lack of what is business excellence and how it may be achieved (Dahlgard, 2003). Moreover, Lu, Betts, and Croom (2011) argued that the critical role of the organization unique and specific practices that contribute in achieving business excellence does not show and capture at the theoretical level which detects a significant research gap. In addition to that, they argued that there are in current literature supporting evidences that business excellence is not a part of business performance. Moreover, the literature clearly shows that not all models of business excellence fulfill the requirements which produce a reasrch gap (Lu *et al.*, 2011). Kanji and Sa (2007) argued that measurement of performance traditionally is

concentrates on the reasons that explain failure or success from historical perspective that is not enough to realize organizational excellence.

According to Antony and Bahattacharyya (2010) the concept of organizational excellence in academic research is originated from Peter and Waterman (1982). Organizational excellence is a complex term and it can be measured based on the integration of multiple relationship between different performance indicators (Antony & Bahattacharyya, 2010). Moullin (2007) attempted to distinguish between organizational performance and organizational excellence. Based on that, he defined organizational performance as a measure of how organizations can be managed well and how they can deliver the value to their customers and stakeholders. On the other hand, he defined organizational excellence as the outstanding practice in managing organizations and delivering values to stakeholders and customers.

Furthermore, it was pointed out by Antony and Bahattacharyya (2010) that the organizational excellence can be calculated depending on the relationships between the different variables of performance, therefore organizations aspiring for excellence cannot attain it by adding a single level of performance variable. Therefore, they concluded that the organizational excellence assists managers to distinguish the success level in organizations in a better way than organizational performance.

In addition to that, Antony and Bahattacharyya (2010) argued that there is no assumption that all performing organizations are excellent organizations. Therefore, they suggested more empirical studies on the relation between performance and excellence with large sample size and including more variables. In connection with that, Ooncharoen and

Ussahawanitchakit (2008) confirmed that organizational excellence has a significant association with business performance. Moreover, Pinar and Girard (2008) found a significant relationship between organizational excellence and performance. They used three measurements to measure the effect of organizational excellence, namely, innovation, customer focus, and personnel commitment. The use of innovation to attain enterprise excellence and sustainability is particularly emphasized (Eskildsen & Edgeman, 2012). In other words, they argued that innovation builds a bridge the gap between organizational excellence and sustainability. Basing on the few articles in the literature talking about the relationship between organizational excellence and organizational performance, this relationship is not clearly defined (Antony & Bahattacharyya, 2010). Moreover, although previous studies found benefits of adopting business excellence elements, most of these studies were in the USA and very few of these studies in the public sector (Oakland Consultation, 2005). According to the result of their study, Eskildsen, Kristensen, and Juhl (2004) found that private and public organizations do not achieve excellent results in the same way; therefore studies that were done in private sector cannot be generalized for the public sector. However, Oakland and Tanner (2008) concluded in their study that both public and private sectors are at the same level of maturity regarding the business excellence. They reported a lacking in empirical studies on public organizations which found to inconclusive and exploratory and only one study by Agus (2004) that has definite results.

The inconsistent results in the previous studies about the relationship between organizational excellence and organizational performance are due to some reasons such as lacking theoretical level that explain the role of organizational unique practices and

strategies to achieve organizational excellence (Lu et al., 2011). In addition to that, small numbers of variables and sample size may lead to have insignificant results (Antony & Bahattacharyya, 2010). Also other factors such as culture, context of study, and examining the relationship in different factors can have different and inconsistent results.

The relationship between organizational excellence and performance are interrelated where one of them leads the other, i.e. organizational excellence of the organization will be followed by organizational performance. Organizations are seeking to achieve performance to attain excellence awards. In other words, excellence is the ultimate goal to be achieved as a result of having higher performance. But, when we look at most of the past research of the relationship between organizational excellence and organizational performance showed that excellence is precedence for any organization to achieve high performance. For example, Ooncharoen and Ussahawanitchakit (2008) examined the relationship between organizational excellence and organizational performance where they found organizational excellence has a positive and significant effect on organizational performance. In relation to that, Ciptono (2005) found Deming's excellence model principle can enhance the organizational performance. In line with that, Additionally, Pinar and Girard (2008) found empirically a significant impact of organizational excellence on organizational performance. In his contribution to the same field, Harrington (2005) argued that organizational excellence is a holistic approach that improves organizational performance. According to the definition of EFQM guidelines (1999) and Moullin (2007) organizational excellence is the outstanding practice that contains innovation, customer focus, leadership and constancy of purpose, management by process and facts, people development and involvement, continuous learning, and

delivering values to customers and stakeholders. Excellence focus, leadership, and sensitivity to stakeholders lead to organizational performance (Padhy, 2013). Therefore, following most of previous studies, this study considers organizational excellence as a practice that helps organizations to achieve organizational performance. In addition, this study aims to investigate the role of practicing excellence in organizations to fulfill the planned and ultimate goals such as increasing and enhancing organizational performance.

With regards to the effect of TQM on organizational performance, this relationship is far than being conclusive. Specifically, many studies found that TQM has a significant and positive relationship with organizational performance (Anderson, Rungtusanatham, & Schroeder, 1995; Choi & Eboch, 1998; Demirbag *et al*, 2006; Dowe, Samon, & Ford, 1999; Easton & Jarrell, 1998; Hendricks & Singhal, 1997; Kumar *et al*, 2009; Pinho, 2007; Munizu, 2013; Prajogo & Sohal, 2003, 2004; Shenaway, Baker, & Lemak, 2007; Talib, Rahman, & Qureshi, 2013; Terziovski & Samson, 2000; Wang, Chen , & Chen, 2012; Zehir, Ertosunb, Zehir, & Muceldilli, 2012). On the other hand, some other studies found that there is no significant relationship between TQM and performance, however sometimes TQM can affect the performance negatively (Davis, 1997; Powell, 1995; Kober, Subraamanniam, & Watson, 2012; Westphal, Gulati, & Shortell, 1996).

These inconclusive findings regarding the effect of TQM on performance is due to the ability of a TQM strategy to enhance the organizational strategic positioning through the excellence and innovation (Prajogo & Sohal, 2004). In addition, there are many critical successful factors (CSFs) that may affect results of the this relationship such as , as reported by many writers, leadership, organizational culture, top management support,

continuous improvement, benchmarking, team building and problem solving, employee empowerment, employee involvement, employee training, use of information technology, and supplier quality and relationships. Unless TQM is able to enhance the organizational competitive advantage, the consequences may not be in favor of organizational overall objectives (McAdam, Armstrong & Kelly, 1998; Vora, 2002). As a result, TQM as a management philosophy is expected to have a significant effect on organizational excellence and subsequently on organizational performance and stakeholder value (Mele & Colurcio, 2006). Thus, organizational excellence, as a mediator, can have the suitable mechanism that can explain the relationship between TQM and organizational performance and solve the inconclusiveness findings in the previous literature. In other words, organizational excellence is considered the instrument that will answer the *how* and *why* the relationship between TQM and organizational performance occurs. According to Baron and Kenny (1986), the mediator is the mechanism that can explain the relationship between independent variable and dependent variable. In other words, the indirect effect through mediator is investigated and compared to the direct effect. Due the the inconsistent results of the direct effect between TQM and organizational performance, the indirect effect effect through organizational excellence was examined. The goal of the organization is not only to have TQM, but to adopt it to achieve the business excellence (McAdam et al., 1998). In relation to that, Adebajo (2001) argued that quality and business excellence complement each other to achieve the desired organizational performance. Moreover, Excellence practices and models are based on TQM principles that can achieve a high level of organizational performance (Ioncia & Baleanu, 2010).

Dimensions of organizational excellence, namely, innovation, customer focus and personnel commitment can play a crucial role in explaining the mechanism of the relationship between independent and dependent variables. To this end, excellence as an organizational activity, may lead to have a better explanation through an indirect effect better than the direct effect between TQM and organizational performance.

Enterprise Resource Planning (ERP) is another factor that is proposed to determine excellence and performance. Information technology has become a major component for organizations to gain, success, performance, and competitive advantage, and considered as a part of this technology that adds benefits and advantages (Yang & Su, 2009). ERP is the most important technological innovation in the last two decades (Jha & Joshi, 2007). However, Wallace and Kremzar (2001) considered ERP as a non-software installation. ERP is not only an instrument that can integrate many modules but a system that can manage the whole organization. Therefore, it is different from other general software in term of integration features and uniqueness (Davenport, 1998). In addition to that, Lee and Lee (2000) defined ERP as the foundation for best management practices. Moreover, Huang and Palvia (2001) defined ERP as an industry and management term that has a set of activities. In relation to that, ERP is considered as a managerial tool that connect the organizational process of accounting and controlling (Chapman, 2005). Roberto (2007) argued that ERP can improve security management and Laframboise (2002) considered ERP and quality management are strategic business activities that improve organizational performance. In the context of TQM, ERP like TQM are the initiatives that have a broad scope affecting the whole processes of the organization (Bhatt, 2000; Manetti, 2001). In other words, ERP implementation can be useful for organizations if it is preceded by

TQM implementation which brings solving and continuous improvement of the ERP implementation (Ghadilolaee, Aghajani, & Rahmati, 2010). In addition, ERP and TQM share similar critical successful factors such as top commitment, open communication, stakeholder involvement, culture, and business process reengineering (Alexis, 2000). Moreover, ERP and TQM have many impacts on business, therefore, organizations without TQM culture may result a lower chance for successful implementation of ERP (Jha & Joshi, 2007). Asil *et al.* (2013) found that TQM is a pre-requisite practice before implementing ERP system. In addition to that, Marc and Gyu (2003) pointed out that not all organizations have been implemented ERP successfully due to some critical factors such as total quality management (TQM), business process reengineering (BPR), and culture. Brah and Lim (2006) found in their study that TQM and technology complement each other and play very important role in improving performance. From all these arguments, ERP is not only a software but more than that, i.e. a management instrument that complements with other management initiatives to enhance the overall organizational performance.

Some authors found that the implementation of ERP system adds a value to any company and increase its performance (Biehl, 2005; Davenport & Brooks, 2004; Irani & Love, 2001; Kamhawi, 2008; Kale, Banwait & Laroia, 2010; Rao, 2000; Shang & Seddon, 2000). However other findings from other authors indicated adverse results that ERP can negatively affect the success and performance of the organization, and sometimes it can be a main reason of collapsing (Hunton, Lippincott, & Reck, 2003; Velcu, 2007; Wieder, Booth, Matolcsy, & Ossimitz, 2006).

The inconclusive findings regarding the performance implication of ERP call for more research to be conducted to address this issue in the literature. The reasons behind this inconclusiveness are due to lacking of management practices in organizations such as TQM that facilitates the ERP implementation (Ghadilolaee, Aghajani, and Rahmati, 2010). Other reasons are related to some CSFs that may impact the performance of ERP such as ERP package selection, process management, project management, system integration, communication, training and education, and culture. Additionally, the context of some studies and the environment where the system implemented affect the results.

Organizational excellence as a management mechanism can explain the existing inconclusive findings to achieve the high levels of performance and mediate the relationship between ERP and organizational performance. ERP with organizational excellence can bring the power to enhance and achieve the desired organizational objectives. Therefore, the demonstration of excellence in information technology is to generate the best results such as enhancing the overall organizational performance (Masli *et al.*, 2010). In addition, ERP in the last few years has been extended to achieve the planning system to contain the whole organization and accomplish the total organizational excellence through integration (Mabert *et al.*, 2000). The dimensions of organizational excellence, namely, Innovation, customer focus, and personnel commitment can have the ability to empower the ERP to increase the overall organizational performance.

Entrepreneurial Orientation (EO) is among the most popular strategies for growth and survival of many organizations (Sila & Ebrahimpour, 2002; Zahra, 1991). Therefore, EO

has been attracting a great attention by academics and practitioners in the last few years. In police department, entrepreneurial policing is an open style of management related to individual leadership styles because of its practicing by anyone within the police service regardless of rank (Smith, 2009). Some authors contend that EO impacts positively and significantly the organizational performance (Altinay & Altinay, 2004; Caruana, *et al.*, 2002; Chow, 2006; Covin & Slevin, 1990, 2006; Dada & Watson, 2013; Davis, Bell, Payne, & Kreiser, 2010; Histrich & Peters, 2002; Hughes & Robert, 2007; Jantunen, Puumalainen, Saarenketo, & Kylaheiko, 2005; Kazem & van de Heijden, 2006; Keh, Nguyen, & Ng 2007; Krauss, Frese, Friedrich, & Unger, 2005; Mahmood & Hanafi, 2013; Madsen, 2007; Naldi, Nordqvist, Sjoberg, & Wiklund, 2007; Poon, Ainuddin, & Junit, 2006; Saeed, Yousafzai, & Engelen, 2014; Sciascia, D'Oria, Bruni, and Larraneta, 2014; Walter, Auer, & Ritter, 2006; Wang & Yen, 2012; Wiklund & Shepherd, 2003, 2005; Zahra, 1999; Zahra & Garvis, 2000). In addition, other studies argued that entrepreneurial orientation can make RBV of the organization more dynamic (Andersen, 2007). On the other hand, some studies didn't find evidence of the significant effect of EO on performance (Andersen, 2010; Slater & Narver, 2000; Smart & Conant, 1994). Moreover, other authors found correlation only in some components of EO to different performance measures (Kropp, Lindsay, & Shoham, 2008; Swierczek & Ha, 2003).

Despite the increasing number of research examining the effect of EO on performance, the findings in the literature are still far from being inconclusive. There are many reasons for this inconclusiveness. Most of previous studies depend on executives' opinions in small firms (Miller, 2011). Other reason is related to the relationship between EO and organizational performance which is not straightforward and influenced by other

organizational elements in the organizations (Hughes & Morgan, 2007). In addition, the characteristics of the organizational strategic management may involve in influencing their relationship (De Clercq, Dimov, & Thongpapanl, 2010; Wiklund & Shepherd, 2003).

Due to this inconsistency in the previous literature, a management tool needed to play the role as a mechanism that can explain the relationship between EO and organizational performance in a better way. Lumpkin and Dess (1996) suggested other mediators that can mediate the relationship between EO and organizational performance such as organizational activities. Organizational excellence as one of the important activity and practice in the organization can intervene and mediate this relationship. Moreover, Harms (2013) indicated that the mediation effect between EO and organizational performance are only examined in 15 papers and most of their results at least there was a partial mediation which hints that other mediators may acting as a mechanism to explain the relationship between EO and organizational performance. In relation to that, the direct effect of EO on organizational performance is not straightforward which influenced by other organizational elements (Hughes & Morgan, 2007; Vij & Bedi, 2012); therefore, the mediating, moderating, and the interaction effects as a third variable should be investigated (Venkatraman, 1989). In relation to that, Arief, Thoyib, Sudiro, and Rohman (2013) argued that researchers should test the mediation effect of EO-performance relationship rather than the direct effect which will provide more accurate results and outcomes of performance. Furthermore, the mediating effect of innovation, as a heart of excellence, has been suggested by Hafeez, Shariff, and Lazim (2012). To this end, the examination of EO on organizational performance gives an incomplete picture (Campos,

Parra, & Parellada, 2012), therefore, a mediator variable is needed to explain this relationship. Last but not least, Arunachalam, Ramaswami, Herrmann, and Walker (2013) mentioned that the previous researches show that EO affects innovation and in turn innovation impacts organizational performance, and no single study tested the indirect relationship through innovation. Thus, organizational excellence as an organizational activity has the power through its elements to explain the mechanism between EO and organizational performance and to answer the related questions *why* and *how* the relationship happens.

Furthermore, EOC is proposed to mediate the relationships between EO and organizational performance. In other words, EOC as mediator variable can explain in better way why and how the entrepreneurial traits affect the organizational performance. The beginning of formal writing on the term organizational culture established by Pettigrew in 1979 (Lee & Yu, 2004). The influence of organizational culture on success of quality and systems like ERP, and its related to performance is concluded by various researchers (Baird, Hu, & Reeve, 2011; Claver, Gascó, Llopis, & González, 2001). In the literature of organizational cultures, there are some conceptual papers that address EOC such as (Cornwall & Perlman, 1990; Duobiene & Pundziene, 2007; Gibb, 1988; Kuratko *et al.*, 2004; Morris *et al.*, 2008; Peter, 1997; Razavi, 2012; Timmons, 1999). However, empirical studies examining the effect of culture on strategy implementation such as culture to TQM, ERP, and EO are still limited (Amado, Llorens-Montes, & Perez-Arostegui, 2009; Claver *et al.*, 2001; Jabnoun & Sedrani, 2005; Lee, Lim, & Pathak, 2011; Lee & Yu, 2004; Lim, 1995; Lumpkin & Dess, 2001). In addition, many researchers suggested that more studies in developing nations to assess the difference

according to firms in different countries and business sectors (Amado, Llorens-Montes, & Perez-Arostegui, 2009; Baird, Hu, & Reeve, 2011).

In essence, in today's turbulent and fast changing business environment, the loyal and satisfied customers are the main players for successful businesses. Organizations worldwide deem customers as the drivers of any strategy implementation. Despite the varieties of definitions provided in the literature for TQM, almost all the definitions agreed that it is the management philosophy that aims to satisfy the customers through continuous improvement (Flynn, Schroeder, & Sakakibara, 1994; Gao, 1991). To be able to satisfy the customers' changing demands, an organization should have an integrated system of information about both internal and external business environment to ensure quick and efficient responses. That is, ERP system has been reported to be one of the major technological advancements during the last few decades. In addition, Jha and Joshi (2007) pointed out that TQM brings continuous improvement opportunities and techniques of problem solving, which facilitate ERP systems implementation and enable organizations to move towards business excellence. Moreover, Asil, Dostar, and Shoja (2013) found that TQM is proceeding of ERP implementation.

However, due to the high cost and required technological knowledge, the investment in ERP systems is an overall decision that reflects the organizational capabilities to foresee the opportunities and tolerate the risk. That is why not all the organizations can invest in ERP systems. In other words, to ensure the success of any organization, the customers should be retained loyal and satisfied. The customers cannot be satisfied and expectations are met and this, in turn, implies that their feedback should be the main driver of product

and services' development processes. In so doing, the organization should be entrepreneurial to invest in the ERP system to have the integrated information system that helps in planning and evaluation. The three variables (TQM, ERP, and EO) are the most important variables for any organizations that want to achieve higher performance because of the interrelation between them. In other words, organizations need a pre-requisite management philosophy and integrated system to connect all their departments, therefore, TQM and ERP are the most recommended practices to do so. But investment in these two practices is so costly and consuming time, that's why entrepreneurial orientation of managers should be there.

In spite of the critical importance of the integrations of TQM, ERP, and EO for any organizational excellence endeavor, this aspect of the investigation is still lacking in the literature. Therefore, this study is an attempt to bridge this gap in the literature by examining the proposed model and testing the hypothesized relationships. In addition, based on the literature review about the relationships between TQM, ERO, EO, EOC, organizational excellence and their effect on organizational performance, there is a lack in the studies about public sector which represents a research gap in the existing body of knowledge that can be bridged in this study.

Another issue related to the TQM-performance relationship is that most TQM studies focused on organizations in developed countries (Chamchong & Wonglorsaichon, 2006; Demirbag *et al.*, 2006; Petroni, 2002; Rahman, 2001; Sharma & Hoque, 2002; Seth & Tripathi, 2005; Sila, 2007) and there is still a lack of TQM studies and their benefits in the developing countries context (Abusa & Gibson, 2013). Notably, there are few studies

that address the implication of TQM on performance in developing and small countries such as the Middle East (Al Khalifa & Aspinwall, 2000; Najeh & Kara-Zaitri, 2007; Pinho, 2008; Rao, Solis, & Raghunathan, 1999; Thiagarajan & Zairi, 1998), geographical regions (Sila & Ebrahimpour, 2002), and public sector context in developing countries (Sharma & Hoque, 2002). More specifically, Sila and Ebrahimpour (2002) mentioned that TQM implementation in the Middle East countries, namely, UAE, Saudi Arabia, and Qatar was only 1.7% of the reviewed studies, which means that there is a lack of knowledge in those countries regarding TQM practices. Additionally, Al-Khalifa and Aspinwell (2000) argued that researchers did not pay attention to conduct empirical studies about quality management in developing countries, especially in Arab and Middle East nations.

The current business environment has been generally influenced by liberalization, globalization, and fast-paced technological advancements. Therefore, there has been a rigid competition among all countries to attract Foreign Direct Investment (FDI) inflows. For this purpose, countries tried to establish a stable and safe business environment with advanced infrastructure. There are many procedures and incentives such as encouraging entry policies, tax exemption, and promoting a safe business environment to attract FDI inflows. Safety and security are the most important factors to attract FDI due to the current global situation especially in the Middle East.

In their race to be the destination as the attractive business environment for FDI and tourism, all the countries around the world have been emphasizing on the creation and development of a safe environment for investment. UAE in general, and Dubai, in

particular, have been the target of many investors and tourists around the world. Due to its strategic location, natural resources, and other important factors, Dubai, has been gaining more attention for its potential business opportunities. The graph in Figure 1.5 shows the overall increase of FDI inflows in UAE. Despite the fact that it witnessed a drastic decline during 2008 and 2009, it was recovered fast during the following.

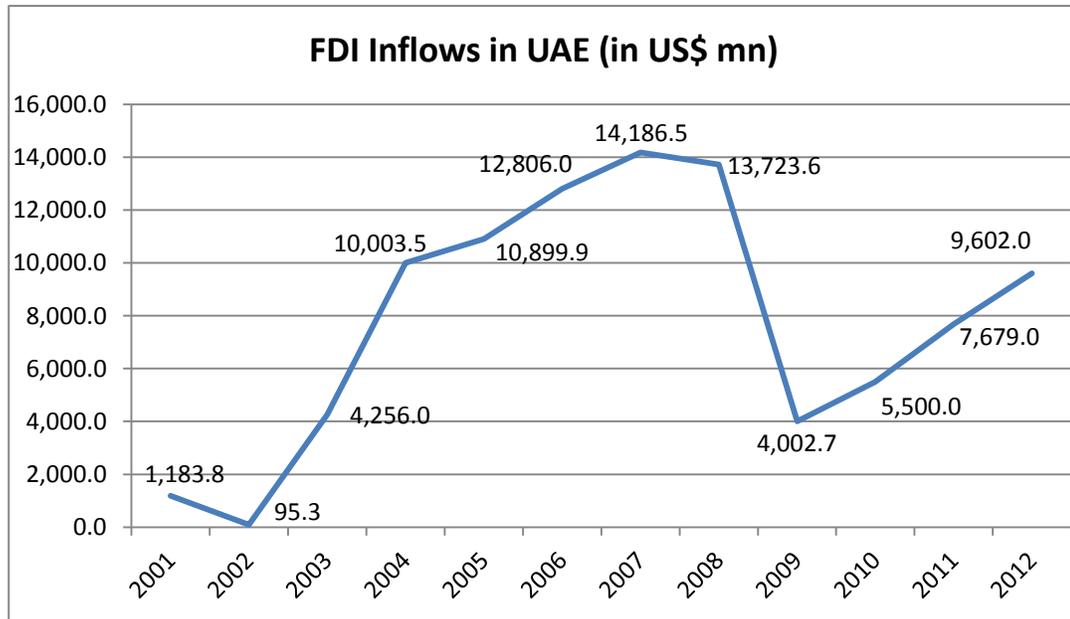


Figure 1.5  
*FDI in UAE*  
 Source: UUM library (2014)

In essence, the government of Dubai is responsible to provide safety and security through its Police system. Therefore, the development of Dubai Police through implementing advanced practices is very important to help Dubai in achieving its goals and objectives.

Therefore, UAE, in general, and Dubai, in particular, has been striving to achieve the excellence in all aspects of operations to distinguish themselves from other countries in the region and worldwide.

HH Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President & Prime Minister & Ruler of Dubai emphasized in his statement that "Our journey of development has been and will remain a race for excellence; a race to consolidate Dubai's position as an evolving, leading and unrivaled contender for the title of the Middle East's financial and commercial capital". Dubai government and its leadership have instituted different types of excellence awards for both public and private sectors to encourage and stimulate excellence in business and satisfying customers (Dubai.ae, 2012).

To be able to promote a safe and attractive environment and be distinct from other organizations, the Dubai police system has to play a crucial role by adopting advanced technologies and implementing innovative strategies.

In general, although the improvement witnessed in the performance of the Dubai Police, the performance is not satisfactory when compared to the government's ambitions plans. In other words, Dubai Government formed its strategic objectives to be number one in all aspects. Therefore, its departments, and Dubai Police among them, should follow and achieve the same strategic goals. Dubai Police still needs more improvement in its performance to be aligned with the government ambition and aspiration. This cannot be done only after an empirical assessment and evaluate the successfulness of strategies and practices that have been implemented.

Another important issue is that although many innovative strategies are being implemented by Dubai government, in general, and Dubai Police, in particular, there is no objective assessment of the effectiveness of strategy implementation. In other words, there is no a reliable empirical and statistical evaluation system to assess the effect of

implementing strategies on performance (according to some preliminary interview of Dubai Police managers listed in the appendix 3). That is, it is difficult to describe to what extent TQM, ERP, and EO can differentiate Dubai Police from other organizations. Unless, there is an evaluation system, strategy implementation would remain a waste of resources and may lead to negative results.

#### **1.4 Research Questions**

Based on the research problem, this study aims to examine the relationships between Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Entrepreneurial Organizational Culture (EOC), Organizational Excellence (OE), and Organizational Performance (OP).

In general, this study aims to answer the following questions:

1. Does Total Quality Management have an effect on the Organizational Performance?
2. Does Enterprise Resource Planning impact have an effect on the Organizational Performance?
3. Does Entrepreneurial Orientation have an effect on the Organizational Performance?
4. Does Organizational Excellence have an effect on the Organizational Performance?
5. Does Total Quality Management have an effect on Organizational Excellence?
6. Does Enterprise Resource Planning have an effect on Organizational Excellence?

7. Does Entrepreneurial Orientation have an effect on Organizational Excellence?
8. Does Entrepreneurial Orientation have an effect on Entrepreneurial Organizational Culture?
9. Does Entrepreneurial Organizational Culture have an effect on Organizational Performance?
10. Does the Organizational Excellence mediate the relationship between Total Quality Management and Organizational Performance?
11. Does the Organizational Excellence mediate the relationship between Enterprise Resource Planning and Organizational Performance?
12. Does the Organizational Excellence mediate the relationship between Entrepreneurial Orientation and Organizational Performance?
13. Does an Entrepreneurial Organizational Culture mediate the relationship between Entrepreneurial Orientation and Organizational Performance?

### **1.5 Research Objectives**

The general purpose of this research is to investigate the impact of Total Quality Management (TQM), Enterprise Resource Planning (ERP), and Entrepreneurial Orientation (EO) on Organizational Performance (OP) by involving Organizational Excellence and Entrepreneurial Organizational Culture (EOC) as a mediating factor. Also, investigate the relationship between Organizational Performance (OP) and organizational Excellence (OE).

The specific objectives of the research are:

1. To examine the relationship between Total Quality Management and Organizational Performance.
2. To examine the relationship between Enterprise Resource Planning and Organizational Performance.
3. To examine the relationship between Entrepreneurial orientation and organizational Performance.
4. To examine the relationship between Organizational Excellence and Organizational Performance.
5. To examine the relationship between Total Quality Management and Organizational Excellence.
6. To examine the relationship between Enterprise Resource Planning and Organizational Excellence.
7. To examine the relationship between Entrepreneurial Orientation and Organizational Excellence.
8. To examine the relationship between Entrepreneurial Orientation and Entrepreneurial Organizational Culture.
9. To examine the relationship between Entrepreneurial Organizational Culture and Organizational Performance.
10. To examine the effect of Organizational Excellence on the relationship between Total Quality Management and Organizational Performance.
11. To examine the effect of Organizational Excellence on the relationship between Enterprise Resource Planning and Organizational Performance.

12. To examine the effect of Organizational Excellence on the relationship between Entrepreneurial Orientation and Organizational Performance.
13. To examine the mediating effect of Entrepreneurial Organizational Culture on the relationship between Entrepreneurial Orientation and Organizational Performance.

## **1.6 Significance of Study**

This study is aimed to produce relevant information on TQM, ERP, EO, EOC, excellence, and performance with specific reference to Dubai Police as a field of study. The overall findings and outcomes of this study will be added to the existing body of literature and contribute significantly to both theory and practice as follows:

Firstly, previous studies on TQM, EO, ERP, and EOC; and their effect on excellence and performance have been carried out separately. However some previous studies have studied the relationships between some of them, for example, between TQM and performance, ERP and performance, EO and performance, excellence and performance, and the effect of organizational culture on TQM, ERP and EO. However, the examination of the joint effect of TQM, ERP, and EO on performance is lacking in the literature. Furthermore, this study will help to fill this gap in the literature within the context of public organizations, specifically in Police departments. In addition, it will help to fill the gap of lack studies in developing countries like the UAE. Moreover, this study is going to suggest a new conceptual framework that specifies the collective effect of TQM, ERP, and EO on organizational excellence and performance under certain entrepreneurial organizational culture, which has never been considered before. As a result of the model

testing of the relationships among variables, the research will provide evidence that excellence and performance can be at the highest level when combining the independent variables mentioned before.

Secondly, the finding of this research can be practically useful for managers, practitioners, and decision makers to enhance the organizational excellence and performance. This study can increase the awareness of Dubai police leaders about what capabilities and competencies they have that can help for more development and improvement. In addition, this study can be taken as a model that can be followed by public organization or police departments in the UAE or in any country. Moreover, even private firms can also take the advantage from this study to enhance their performance.

Ultimately, this research can be used as a base for creating certain rules and policies of the UAE Government in practicing and applying model of this study to enhance the development, growth, excellence, and performance of their service organizations.

### **1.7 Scope of the Study**

This study will focus on the joint effect Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), and Entrepreneurial Organizational Culture (EOC), on Organizational Excellence and Performance. For this purpose, Dubai Police has been chosen as a field of study to be the source of the data that to be used for model testing. In order to answer research questions and meet the research objectives, this study will employ a quantitative methodology approach. It involves a questionnaire survey among Dubai Police head sections in sub-departments and police stations. There are more than 700 head sections that are responsible of these sections

either in departments or in police stations. Therefore, survey questionnaire will be distributed to some of these head sections according to the selected sample whether inside Dubai Police Head Quarter or in outside departments and police stations.

Dubai Police (DP) is one of these local police departments that come under the direction of H.H Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. DP is a police department in Dubai which is known as Dubai Police Head Quarter. DP was established in June 01, 1956 in Naif Fort and moved in 1973 to its present location in Al Towar area, by the local government of Dubai with a small number of employees, but now it is a large organization with more than 15000 employees (Abdulla *et al.*, 2008; Dubai Police, 2009) (for more details about Dubai Police, see Appendix no. 6).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter introduces the past literature review in the research fields of organizational performance (OP), organizational excellence (OE), total quality management (TQM), enterprise resource planning (ERP), entrepreneurial orientation (EO), and entrepreneurial organizational culture (EOC). It provides investigations of the effect of TQM, ERP, and EO on the organizational performance through organizational excellence as a mediating variable. In addition, it will also introduce entrepreneurial organization culture (EOC) as a mediating variable in the relationship between EO and organizational performance. This chapter will provide a comprehensive review of the previous literature which will help in emerging hypotheses.

#### **2.2 Organizational Performance**

In the literature of organizational and humanity researches, there is a great abundant research that focus on organizational performance. The reason behind that is the significance of organizational performance in developing organizations and the implication of these studies on organizational competitiveness and effectiveness.

Combs, Crook, and Shook (2005) pointed out that in management literature, it has been well known that organizational performance is considered as one of the most important constructs in the field of organizational studies and strategic management. Therefore, in

the last few years, both practitioners and academics conducted abundant research work on organizational performance to understand the processes, antecedents, and other things that enhance the outcomes of the organizations (Jing & Avery, 2008).

### **2.2.1 Public Organization Performance**

Interest in efficiency and effectiveness of the public sector has been growing (Osborne & Gaebler, 1992). The main purpose of performance management in the public sector is to make performance, objectives, and resources clear; to integrate budget cycle and policy; to integrate nonfinancial and financial information; and to improve accessibility, quality, and the content of information on the management information (De Waal, 2010).

In addition to that, studies in the public sector showed that organizations that implement performance management were likely to provide better services to customers, achieve their objectives, and improve their efficiency and effectiveness (De Waal & Kerklaan, 2004).

Performance of public and private sectors is different according to their goals and core business. While private sector intends to achieve profit and enhancing customers; public sector intends to achieve quality, customer satisfaction, and good performance. The main purpose of any public organization is to satisfy needs of society within available budget (Dewhurst, Martinez-Lorente, & Dale, 1999). Public organizations have different goals and objectives that are more intangible in nature than in the private sector (Cinca *et al.*, 2003). Improving the performance of government has been the mainstream of public administration research and policy during the last twenty years (McBride, 2008).

Governments are looking for improving their performance in terms of program outcomes, use of public resources, citizen participation, customer satisfaction, transparency, strengthen integrity, combat and prevent corruption, and accountability (Ashour, 2004). Moreover, he also pointed out that this reform is important and crucial to enhancing public sector performance, protecting public performance, and strengthen the government's role in providing basic services and development.

In relation to performance, measuring performance in the public sector is an integral part of the management process to evaluate whether strategic objectives are being met or not, and if the major problems still there and how to solve and improve them in the future (Kanji & Sa, 2007). In addition to that, public organizations at the present time consider the use of performance measurement as an important movement towards service quality and to provide value for money (Morgan & Murgatroyd, 1994). According to the result of their study, Eskildsen, Kritensen, and Juhl (2004) found that private and public organizations do not achieve excellent results in the same way; therefore studies that were done in private sector cannot be generalized for the public sector.

### **2.2.2 Organizational Performance Definition**

The organizational performance system is a complex relationship between six different performance criteria: efficiency, effectiveness, innovation, quality, productivity and profitability (Sink & Tuttle, 1989).

Moullin (2007) defined organizational performance as a measure of how can organizations is managed well and how organizations can deliver the value to their

customers and stakeholders. In addition to that, Antony and Bhattachatyya (2010) defined organizational performance as the tool and measurement that is used to assess and evaluate the organization's success to create and deliver value to its internal and external customers as well.

In today's competitive and changing business environment, it is widely stressed that organizational performance measurement is very important to evaluate the level of success of organizational strategy direction (Neely, 1999). Therefore, without measuring the current situation of any organization, it is impossible to improve its business entity.

Despite of the extensive research work that has been conducted in literature regarding the organizational performance, there is no agreement among those scholars and writers on the definition of organizational performance and how can be defined (Ford & Schellenberg, 1982; Johannessen, Olaisen, & Olsen, 1999).

### **2.2.3 Measuring Organizational Performance**

Performance measurement is very important for more effective management in any organization (Demirbag *et al.*, 2006). In addition, Pongatichat and Johnston (2008) pointed out that performance measurement is considered an important aspect of management. Kanji and Sa (2006) argued that performance measurement has a significant communication role that makes people aware of what measurements needed to improve the overall organizational performance. They added that the main goal of performance measurement can be synthesized to check the progress towards the desired goal through identifying improvement opportunities, achieving organizational alignment

and goal congruence, enhancing accountability, driving future resource allocation decisions, communicating to each individual to contribute to the entire strategy and encouraging certain attitudes and behaviors. In relation to that, Kanji (2002) focus on four areas for measuring performance, they are achieve process excellence, maximize stakeholder value, delight customer, and improve organizational learning.

According to Deming (1986), improvement of something cannot be done without measuring it. Therefore, improving of organizational performance needs some measurements to determine the extent of effectiveness of organizational recourses on business performance (Gadenne & Sharma, 2002; Madu *et al.*, 1996). In tradition, organizational performance is usually measured by financial measurement indicators that have some shortcomings, however, to overcome these shortcomings some authors added non-financial indicators to the traditional measuring systems (Demirbag *et al*, 2006).

In the context of performance measurement and benchmarking, Dawkins, Feeny, and Harris (2007); Debnath and Shankar (2008) argued that benchmarking is considered as an instrument to the process of organizational performance improvement. Therefore, Longenecker and Fink (2001) concluded that organizations those fail to practice benchmarking as an integral part of their process of performance measurement will result low expected performance improvement and high dissatisfaction and turnover among employees.

In the same stream of research, Neely *et al.* (2005) defined performance measurement system as the group of metrics that used to quantify actions both effectiveness and efficiency. These metrics can support the decision making process by gathering,

monitoring, and analyzing information related to performance (Garengo & Bititci, 2007). Moreover, this information helps organizations to effectively plan, manage, control, and perform the processes and their activities in organizations.

As has been mentioned earlier, that performance measurement traditionally depends and focuses on financial measures and indicators such as profit, debt, sales turnover, and return on investment. However, these financial measures are not enough to face today's business competitive environment. Therefore, other measures should be included and practiced such as non-financial measures. Johnson (1983) and Kaplan (1984) proved that financial measures are not efficient in measuring performance in a competitive business environment. However, a financial measure like profit is the most important driver of business, but it cannot reflect the ability and capability of the organization to maintain a profit organization in the future (Bruns, 1998). On the other hand, non-financial performance measures including creating value to stakeholders like employees, society, and customers are in focus because they are expected to include predictors of financial performance in the future (Kristensen & Westlund, 2004). In addition, they pointed out that including and implementing financial and non-financial performance is called organizational or business excellence. It has been concluded by Kristensen and Westlund (2004) that in today's business community non-financial performance measurement must be significantly improved.

Nowadays, there are different systems used by organizations to measure and evaluate organizational performance such as Performance Prism and Balanced Scorecard. The Performance Prism was created by Neely and Adams in 2000. According to Neely and

Adams (2002), in the structure of Performance Prism, the core of searching for success in organizations is stakeholder satisfaction. Moreover, Performance Prism considers vendors, employees, intermediaries, community, and regulatory authorities. Therefore the results are much more realistic and correct for business leadership (Adams & Neely, 2006).

Similarly, the most popular model in measuring organizational performance was created by Kaplan and Norton (1992) that was called Balanced Scorecard (BSC). BSC assesses the performance of organizations from different perspectives namely, customer perspectives and innovation, financial perspectives, internal business perspectives, and learning perspectives.

In literature of performance measurements, many studies suggested a link between the implementation of BSC and improved organizational performance. For example, Malina and Selto (2001) in their attempt to investigate the BSC implementation implication on financial performance, they supported the assumption of the existed or indirect relationship between financial performance and BSC implementation. Similarly, Hoque and James (2000) examined the effect of BSC implementation on organizational performance, and their results approved the successfulness implementing BSC which ultimately to superior performance. To this end, improvement of any process can be improved without measuring the results that represents the outcomes (Deming, 1986). Therefore, measurement tools needed to know to what extent the organization achieve its objectives in terms of performance.

#### **2.2.4 The Performance Measurement used in this Study**

Kaplan and Norton (2000) argued that the financial organizational performance has essential importance of successful measurement in terms of profit organizations. On the other hand, they argued that non-financial organizational performance has grown rapidly the importance in measuring service and public organizations. Elefalk (2001) reported in his study about the balanced scorecard of the Swedish Police. His aim was to find ways to improve the analysis, management, planning, and follow-up of the work of police department.

The current study will focus on organizational performance and excellence in the public sector, namely the Dubai Police. Therefore, non-financial performance measures will be selected to measure the organizational performance due to the following assumptions:

- Dubai Police is a public organization that produces services to society and does not have any objective to earn profit or financial incomes.
- As a social and nonprofit organization, Dubai police aims to satisfy customers, improve quality, and innovativeness.
- The above two assumptions require non financial measurements which are not concerned about money and profit.
- Non financial are more suitable for Dubai Police to improve its services, delight customers, and achieve its goals and objectives in the future.
- The data of this study will be gathered from respondents inside Dubai Police by using questionnaire survey. Therefore, asking financial questions will not be appropriate hence respondents are not concerned with financial issues.

According to Kaplan and Norton (2001), BSC has been implemented by government and non-profit organizations in the last five years. In addition, they argued that government and non-profit organizations faced difficulties to implement the original architecture of the BSC that placed financial perspective at the top; so, many of them reorder the BSC to make customers at the top of its hierarchy. To this end, BSC is considered one of the most successful tool that measures the performance and widely used by many organizations such as DP. Therefore, this study will apply BSC to evaluate Dubai Police performance.

### **2.3 Organizational Excellence**

The word “excellence” refers always to the highest rank of evaluation. Dahlgaard-Park (2009) mentioned that it is not easy to know when you can attain excellence if you don’t know what excellence is. It is more related with "business" or "organizational" excellence, however, they are driving to the same meaning with the distinction that organizational excellence is more used in public sector organizations and business excellence used more to organizations of private sector (McAdam, 2000).

Reed and Lemak (2000) pointed out that whether business excellence can confirm and lead to competitive advantage is still not finalized and there is a debate among researchers, and the underpinning theory of this view is still little. Nowadays, many organizations are looking for excellence, but unfortunately many of them missed to attain this goal because they don’t have a deep understanding what excellence means (Dahlgaard, 2003).

In today's rapid changing business environment, organizations either in the private or public sectors are seeking to improve their performance and achieve competitive advantage among competitors. Therefore, the present study focuses not only on organizational performance but also on organizational excellence. Studies about organizational performance are abundant in literature, but how excellence can lead to performance has been greatly neglected. According to Antony and Bahattacharyya (2010) the concept of organizational excellence in academic research is originated from Peter and Waterman (1982). Excellence is a complex term more than performance, and the organizational excellence can be measured based on the relationship between different indicators of performance (Antony and Bahattacharyya, 2010). They also proved that organizational excellence can be calculated depending on the relationships between the different variables of performance, therefore organizations aspiring for excellence cannot attain it by adding a single level of performance variable. In addition, they concluded that the organizational excellence helps managers to differentiate the level of success in organizations in a better way more than organizational performance.

In relation to management and organizational excellence, the word excellence is used in quality management to upgrade the organizational management level to the excellence level that will provide with excellent results such as delight the consumer and customers (Dahlgaard-Park, 2009).

### **2.3.1 Definition of Excellence**

The literature of organizational studies contains many definitions of the excellence construct. According to Hillman (1994), excellence assessment is the operation of

evaluating a firm against a continuous improving model to comprehend what has been achieved and what improvements it needs. According to the European Foundation for Quality Management (EFQM guidelines, 1999) as "outstanding practice in managing the organization and achieving results-all based on a set of nine fundamental concepts, viz, result orientation, customer focus, leadership and constancy of purpose, management by process and facts, people development and involvement, continuous learning, innovation and improvement, partnership development and public responsibility."

According to the American Heritage dictionaries (1992), the word excel is defined as "to do or be better than; surpass, to show superiority, surpass others". Furthermore, excellence is defined as the quality, state, or condition of excelling, superiority. In addition, the term excellence is derived from Latin word called "Exceller" which means "to ascend" (Attafar, Forouzan, & Shojaei, 2012). They pointed out that this term has different meaning in literature according to the author, as examples: excellence meaning quality (Peter & Waterman, 1982), value (Feigenbaum, 1983), proportionality for use (Juran & Gryna, 1988). In addition, they refer to the following definition:

- According to Amid (1992), excellence means ascending, become superior, and transcending.
- According to Yazdi (2010), organizational excellence is the growth and enhancement in all the organization's dimensions.
- Lotions (2000) defined organizational excellence as a reasonable and intentional introduction, strengthening, creating, and dissemination of change to improve effectiveness of the organization.

- Harrington (2005) defined organizational excellence as a holistic method for organizational improvement.

Moreover, excellence means accuracy, absoluteness, and perfectness (Attafar *et al.*, 2012). In other words, organizational excellence is how to make organizations better in growth and in excellent path. Furthermore, Kanji and Sa (2006) defined organizational excellence as instrument of measuring the satisfaction of employees, customers, and stakeholders simultaneously in the organization to achieve a comprehensive evaluation of the overall organizational performance.

In the same vein, Ahadinezhad, Badami, and Mostahfezian (2012, p. 328) defined organizational excellence as "a commitment to sustainable development and sustainable growth in order to achieve customer satisfaction and continuous increase in the profitability of the inclusive supportive environment". In addition, they pointed out that excellence has been created in order to identify capabilities of organizations to achieve quality, growth awareness of quality, superior performance, and performance excellence, within a competitive framework.

In relation to that, Moghadami (2005) argued that excellent organizations have the following characteristics:

- Customers: superior organizations attract and maintain their customers.
- Employees: superior organization hires, attract, and maintain employees and compensate their high performance.

- Leadership: superior organizations have access to their leadership competencies, and to their current performance and decisions.
- Capital owners: superior organizations have great and high financial resources.
- Learning: superior organizations have knowledge acquisition and spread this knowledge among all levels in the organization.
- Future generation: establish future values.
- Globalization: superior organizations always thinking to be global to increase their benefits simultaneous with the local benefits.
- Change or transformation: thinking about innovation and improvement.
- Suppliers and strategic partners: enhancing relations with suppliers and all partners.

Similarly, Eisakhani (2008) mentioned that excellent organizations have seven characteristics such as ambition purposes, perspective and mission, strategic thinking, organization planning, leadership, processes, and technology.

In the same stream of research, Riahi (2005) mentioned twelve characteristics about excellent organizations such as being flexible and responsive, using short-term, medium-term and long-term programs, paying attention to beneficiaries' needs, focusing on potential demands of customers, foreseeing and inspired leadership, innovation and learning, effective management system, employees participation, paying attention to process, clarification and responsiveness, development and preserving cooperation.

In summary, the definition of EFQM about organizational excellence is the most suitable definition for this study. According to EFQM, organizational excellence is an outstanding

practice such as innovation and improvement that can be practiced by organizations to achieve the ultimate goal, i.e. organizational performance. In other words, organizational excellence in this study is a practice that explains the effect of independent variables on organizational performance. Therefore, organizational excellence is not an ultimate goal to achieved prizes and medals, but it is a set of strategies and practices such as innovation to achieve higher organizational performance.

### **2.3.2 Pillars of Organizational Excellence**

In today's competitive environment, organizations need to excel. Therefore, organizations need to on all sides and parts and use the effectiveness of all their own resources (Harrington, 2005). Moreover, a holistic approach that improves performance of the organization is called "organizational excellence". It was argued by Harrington (2005) that there are five things that should be managed for an organization to excel. He called them "The five pillars of organizational excellence". He pointed out that all these five pillars must be managed simultaneously. These five pillars are:

- Process management: the process is a series of interconnected activities that process input and produce final output. It is very important to manage the process in order to achieve excellence.
- Project management: there are only 26% successful projects. The most important projects that organizations must undertake are processed redesign and process reengineering.
- Change management: change is the inevitable destiny for any organization; therefore, the organization should embrace it to be successful. The change management

system has three elements, they are: defining what will be changed, defining how to change, and making the change happen.

- Knowledge management: these days knowledge is regarded as the key to an organization's success. Technology is in every part of our life, therefore, the more using of technology and knowledge, the more gaining of competitive advantage. Knowledge should be documented not just in employees' minds.

- Resource management: Resources are the heart of everything. Organizations cannot accomplish anything without it. Resource management includes all resources and the assets available inside the organization.

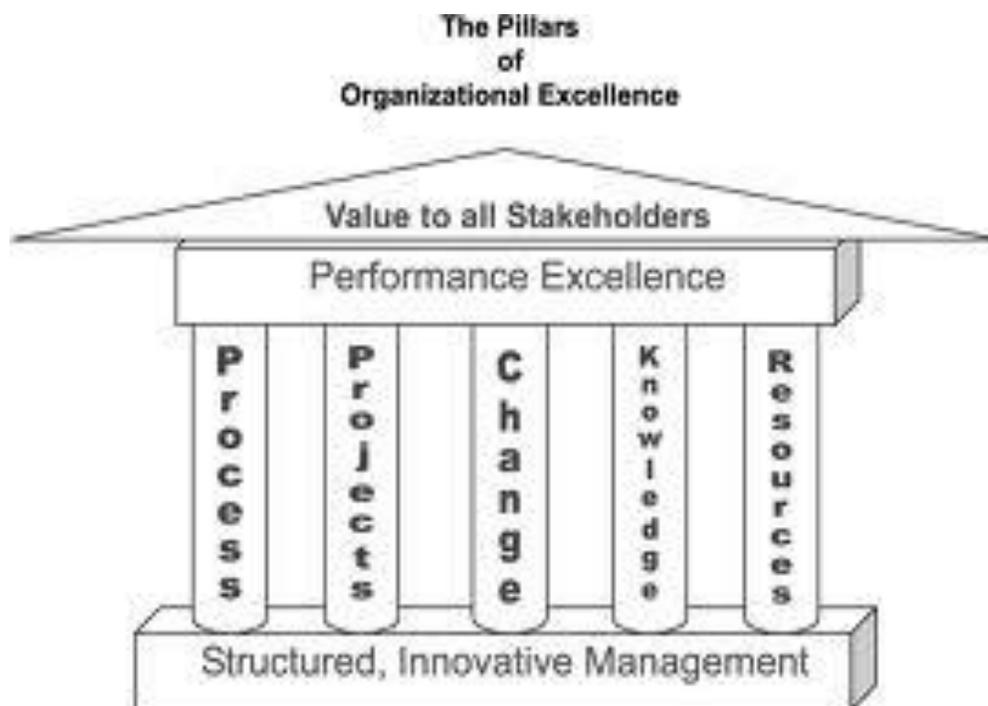


Figure 2.1  
*The Pillars of Organizational Excellence*  
Source: Harrington (2005)

### **2.3.3 Private versus Public Sector Excellence**

A comprehensive review of traditional political scientific literature shows that there are distinct differences between public and private organizations (Lane, 1993). This difference is clearer in business practice and strategic goals. Despite of that, the ISO quality assurance standards are the same for public and private organizations, and the Excellence Model is the same for both (Eskildsen *et al.*, 2004).

In relation to that, Eskildsen *et al.*, (2004) studied the difference between private and public sector organizations in Denmark in relation to the penetration of holistic management models and how companies achieve excellent results based on a questionnaire survey collected from 700 private sector organizations and 400 public sector organizations. The result of this study shows that the penetration of holistic management models is greater among public organizations. In addition, private and public organizations do not achieve excellent results in the same way.

In connection to this, Prabhu, Robson, and Mitchell (2002) investigated the extent, to which business excellence culture has really permeated public sector in the UK, and compared between the private and public service sector where business excellence has established for a long time. The empirical results based on a questionnaire collected from 119 public sector organizations in North-East England, shows that the public sector has several strengths but there are still other challenges that need to be solved.

It is great to mention that as a modern term and practice, excellence is widely used in public and private sectors with difference in their objectives of using it. The objective in the public sector by enhancing excellence is to increase performance, delight and satisfy

customers, and transparency. On the other hand, the private sector aims to increase profits, gain loyalty from customers, and achieve competitive advantage.

### **2.3.4 Organizational and Business Excellence Models**

Organizational and Business excellence models are instruments that help organizations to measure organizations' degree of being at excellent organizations' path (Attafar *et al.*, 2012). Moreover, Ghorbani and Nouri (2005) argued that these models assist organizations to compare themselves with other best practices and lead to encouragement for self-evolution, recognition, clarification, and explaining attitudes those related to the results of performance.

In his research regarding the organizational excellence models and their advantages, Salekzamani (2006) stated the advantages of using organizational excellence models as follows:

- Models of organizational excellence help organizations to mend applications of organizational performance and their outcomes.
- By using best practicing applications, organizations able to share facilitation communications and information.
- They are tools for performance management and perception.
- They are directing organizations for their strategic planning and learning opportunities.

The following models are among the famous organizational excellence models:

#### **2.3.4.1 Deming award model in Japan (1951)**

Getting started with organizational excellence framework is not easy task. It should be based on theoretical background to avoid failure. Profound knowledge and fourteen points of Deming can provide a foundation for leaders to follow the road of excellence. Deming was the one to whom Japanese reform after the 2<sup>nd</sup> world war give credit for industrial renaissance during the 1950s (Petersen, 1990). Moreover, Deming's approach for excellence and success gained momentum in the early 1980s. Japan established award called The Deming Prize which refers to Japan's national quality award (Rungtusanatham, Ogden, & Wu, 2003). This award inspired the creation of other quality awards like the Malcolm Baldrige National Quality Award in the USA and EFQM in Europe.

According to Rungtusanatham *et al.*, (2003) Deming's fourteen points for organizational improvement are followed:

- Create constancy of purpose in order to improve service and product with the goal to stay in business, become competitive, and provide jobs.
- Adopt the new philosophy. Because of the new economic age, so western management must challenge, take on leadership change, and learn their responsibilities.
- Cease dependency on mass inspection in order to improve and develop quality.
- End the practice of awarding business on the basis of price tag alone. This can be by minimizing total cost and build a long relationship with one supplier for any one item.
- Develop permanently and forever the system of production and service.
- The training of job must be instituted.

- Institute leadership. Supervision and leadership is needed to help workers for a better job.
- Drive out fear to enable all workers and people in the company to work effectively.
- Break down the barriers between departments. All people in the company should work as a team to foresee problems of production.
- Eliminate slogans, exhortations, and targets for the workforce by asking for zero defects and enhance new levels of productivity.
- Remove standards of work, management by objective, replace leadership, and avoid management by numeric goals.
- Eliminate barriers that stole the hourly worker of his right to pride of profession.
- Establish strong program of self-improvement and education.
- Everyone in the organizations can achieve the transformation.

#### **2.3.4.2 Peters and Waterman's Model (1982)**

Peters and Waterman described forty two of the best running companies in the USA and provided general principles that can be used and implemented in any organization (Kanji & Sa, 2006). In their extensive research plan, Peters and Waterman (1982) selected 500 firms in 53 industrial scopes (Attafar *et al.*, 2012). They achieved eight characteristics of successful firms that contribute to organizational excellence, they are:

- Bias for action: to start doing something and avoid neglect against difficulties.  
Also to accept failure even if it is less.

- Close to the customer: they considered this dimension is the most critical and important characteristic for organizations successfulness. Message of organizations should be focusing more on customers' demands and needs.
- Autonomy and entrepreneurship: according to Peters and Waterman, organizations should implement new and innovative programs. This can be achieved by decentralization of work, communications easiness, and freedom and non-existence obstacle when talking to each other.
- Productivity through people: they are focusing on employees as the center for organizations to enhance productivity and gain benefits. Moreover, they believe that empowering employees are the most critical factor that affect positively quality and productivity.
- Hands-on, value-driven: organizations should be investigated in their belief in system value. They should have true beliefs for their durability.
- Stick to the knitting: the view point of Peters and Waterman is to focus on the main task.
- Simple form, lean staff: conditions of work inside organizations and structure are important in successful companies where employees are aware of work processes.
- Simultaneous loose-tight: they argued that flexibility is mainly coexistence, and successful organizations are those centralized and decentralized at the same time.

The research conducted by Peters and Waterman started at the beginning of 1980's constitute basis of their theory and nowadays rooted in an extensive range (Attafar et al., 2012). The management book "In Search of Excellence" by Peters and Waterman was published in 1982 and considered as one of the biggest widely read and selling ever. As

Tom Peters explained in one interview in 2001, “In Search of Excellence” did not set out as a book. They were consultants on the margins of Mckinsey’s New York Corporate.

The starting analysis of their model was Mckinsey’s 7S Framework which involves seven success criteria behind excellence, namely, structure, strategy, systems, shared values, skills, staff, and style (Dahlgaard-Park & Dahlgaard, 2012). Peters and Waterman’s (1982) major contribution is their early recognition of the significance of the soft dimensions of organizational realities such as shared values, staff, skills, style, and systems. Peters and Waterman observed that managers are obtaining everything done if they pay attention with the 7S. Today many companies that identified by Peters and Waterman became unsuccessful (Dahlgaard-Park & Dahlgaard, 2012). This indicated that any excellence model has limitations. Therefore, there is a need to analyze the model of Peters and Waterman’s findings with other later excellence models.

#### **2.3.4.3 Malcolm Baldrige Model (1987)**

In order for organizations to achieve long-term effectiveness, the US congress in 1987 created the Malcolm Baldrige National Quality Award to recognize performance and quality, and to encourage excellence in American companies (Dejong, 2009).

According to a research by Miguel (2004), there are 76 nations which administrate a national Business Excellence Framework, with around 50 of them are using Malcolm Baldrige (MBNQA) criteria.

Davis, Marcos, and Stadning (2005) and Peschel (2008) pointed out that MIBNQA has seven categories and several items. The seven categories of Baldrige criteria for organizational performance excellence are:

- Leadership: focus on the practices of the organization's top management leaders and how they are directing their organizations.
- Strategic planning: examine set of strategic plans in the organization.
- Customer and market focus: it is related to the organizational policies which are related to customers' needs and expectations.
- Information and Analysis: examine the extent effectiveness of using information to enhance planning capabilities.
- Human resource management focus: focus on using the potential workforce capabilities and organizational strategies.
- Process management: investigate the organizations' processes how are designed, managed, and improved.
- Business results: it is focusing and examining the overall organizational performance by comparing and relating to other competitors.

#### **2.3.4.4 European Excellence Model (EFQM) (1991)**

In order for organizations to achieve organizational improvement and customer satisfaction, EFQM has been founded to help organizations to measure their performance level. It is used in different countries as a model to identify the extent of their achievement and performance. EFQA has nine criteria, five of them are called "Enablers" and the other four criteria are called "Results" of the achievement and performance of the

activities (Ahadinezhad, Badami, & Mostahfezian, 2012). The following are the nine criteria of the European Framework Quality Management Excellence model:

- Leadership: This criterion is examining the role of leaders inside the organization in developing the organizational goals and achievements.
- Policy and Strategy: it is related to the organizational strategies and plans that can be implemented through programs and procedures.
- People: to examine the policies and plans that implemented and designed into the organization to release and develop the full potential of employees.
- Partnerships and Resources: to examine the strategic plans those designed by organizations for supporting and managing effective operations.
- Process: it is more related to how organizations can manage their processes to increase value for customers.
- Customers Results: This result criterion examines the organization's performance in relations to customers' results.
- People Results: to examine the organization's performance in relation to its people.
- Society Results: to examine the organization's performance in relation to its society.
- Key Performance Results: to examine the organizational performance excellence in relation to plans' set-up.

#### **2.3.4.5 Kanji's Leadership Excellence**

Kanji's leadership excellence model is a tool to measure the business excellence level through a leadership based construct (Oakland & Tanner, 2008). It is designed to be used in both public and private sectors. Kanji (1998) examined the excellence model with pyramid model. In addition, empirical technique that has been used by Kanji to prove the casual relationship is the strength of this model. According to Oakland and Tanner (2008), the Kanji's Leadership Excellence instrument has been chosen for many advantages like it was designed for both private and public sectors and employed by many studies. They found a positive and significant relationship between excellence and performance in both sectors. Addition, they concluded that the effect of business excellence on public and private has no significant difference which refers to the similarity of maturity level between public and private sectors.

#### **2.3.4.6 China Performance Excellence Model**

The China performance excellence model is modified from Malcolm Baldrige Model which has 7 categories including leadership, strategic planning, customer and market, measurement, analysis and improvement, resources management, process management, and performance results (Ree & Ma, 2009). The first three categories 'leadership', strategy planning', and 'customer and market' are called leadership term; the other three categories 'resources management', 'process management', and 'performance results' are called result term (Ree & Ma, 2009). They added both leadership and results terms are based on measurement, analysis, and improvement.

#### **2.3.4.7 Malaysian Total Performance Excellence Model**

It is great to mention that most of business excellence models such as MBNQA, EFQM, and Kanji's models are based on total quality management (Dowe, Samson, & Ford, 1999). According to Hussain, Abdullah, Idris, & Mohd Sagir (2001) The Malaysian Total Performance Excellence Model consists of the following constructs:

- Leadership: it is the most important element. It has been included in studies of TQM critical success factors.
- Change Management: it is a variable of managing change towards decreasing sensitivity to change in organizations.
- Culture and Values: culture and values are critical factors those influence the performance of organizations, internal development, and strategic process.
- Strategy and Objectives: it is very important for any organization to have a strategy that can follow and measure, and objectives those can be achieved.
- Resource Management: modern organizations are more focusing on managing their resources in effective and efficient ways.
- Best Practices: world organizations are always looking forward to become a world-class organization. Therefore, it is very important for any organization to look for best practicing to manage activities.
- Innovation: it is the key of success in any organization. Innovation can occur in three domains, process, product, and organizational (Neely & Hill, 1999).

- Employee Satisfaction: employees are the live assets in organizations, and they are the one who will achieve success and implement plans and strategies. Therefore, their satisfaction is very important to enhance organizational performance and excellence.
- Customer, Community and Stakeholder Focus: this category focuses on the external environment that includes customers, community, and stakeholders of the organization.
- Productivity: it is the last goal of managing internal management. Productivity can be measured to refer to the employees' effectiveness.
- Total Performance: all the previous construct are working together to achieve the total performance. The performance includes revenue, profit, market share and image.

### **2.3.5 Leadership and Organizational Excellence**

Most of organizational excellence models consider leadership as the most critical factor for organizations have high performance and gain the proposed success. Good leadership is expected to be the key to the organizational success that result a superior performance (Pinar & Girard, 2008).

In relation to that, Darling and Nurmi (1995) pointed out that organizational excellence can be achieved through the implementation and development of leadership strategies. Therefore, past research suggested a positive correlation between performance and leadership in most organizations (Nohria, Nitin, Joyce, William, Roberson, & Bruce, 2003). In their empirical study about the impact of organizational excellence and leadership on business excellence, Pinar and Girard (2008) studied this relationship based on a survey questionnaire of 200 firms. The results showed that commitment to

organizational excellence indicates a higher level of leadership qualities. In addition, they suggested that organizations should do well in the three areas of organizational success factors to achieve performance, i.e. constant innovation, committed people, and valuing employees.

In connection to this vein of research, Dahlgard-Park (2009) pointed out that management without leadership will not be able to create and generate excellence. Moreover, she added that building leadership can initiate organizational excellence, which refers to developing leaders through training and education to have the right values and competencies. It is worth to mention that organizations which aim to achieve excellence, there should be a harmony between leaders and followers and work as a team. The role of leadership is considered the rock star in the development of any organization to achieve excellence and performance.

### **2.3.6 Performance Measurement and Organizational Excellence**

For a long time, organizations' performance measurement was focused only on financial indicators which fail nowadays to measure organizational performance due to the high competitive environment that enforce organizations to generate new measurements. Organizations should modify their methods of performance measurements for the sake of achieving business excellence (Kanji, 2002; Abas & Yaacob, 2006). According to Simons and Davila (2000), traditional and classic indicators for organizational measurement such as return on asset, return on net asset, and return on sales, are useful but they are not reflecting the organization's quality of work when strategies implemented. In addition to that, Miranda and Silva (2002), argued that any plan or

action implemented in organization should be followed up to know to what extent goals and strategies will be achieved, and what corrective actions should be implemented if required. According to them, organizations need to do performance measurement of the following factors:

- Controlling planning.
- Feeding employees' incentive systems
- Controlling the organization's operating activities.

While reviewing the literature regarding the relationship between performance measurement and organizational excellence, there are some writers make a link between them, i.e. good and rigors in performance measurement can lead to organizational excellence. Moullin (2002) is one of these writers who defined performance measurement and organizational excellence, and offered a clear link between them. The two definitions show a clear relationship between performance measurement and organizational excellence where performance measurement provides information that needed evaluate the extent of delivering value and achieving excellence by organization (Moullin, 2007). Moreover, an innovative performance measurement system can enhance organizational excellence (Kanji & Sa, 2003).

In the same stream of research, Kanji and Sa (2007) investigated the relationship between performance measurement and business excellence. They used a data collected from 85 municipalities in Portugal. They used structural equation modeling to test their model. Their results confirm validity of the KBENS model, there is a positive and statistically significant relationship between them.

Similarly, Sa and Kanji (2003) investigated the approach of performance measurement that find the path to organizational excellence in Portuguese local government. They used the data collected from 308 Portuguese municipalities. They used structural equation modeling (PLS) to test the model. Their finding provides methodology and tools to achieve business excellence in local government.

### **2.3.7 Organizational Performance and Organizational Excellence**

Organizational performance and organizational excellence are the most important indicators for organizations' competitiveness, goal achievement, success, development, and advancement. Therefore, organizations tend to achieve them in their short, medium and long term objectives. The relationship between organizational excellence and performance are interrelated where one of them leads the other, i.e. organizational excellence of the organization will be followed by organizational performance. According to EFQM, organizations that have performance of 60 percent or above are considered as excellence organizations. In addition, existing models on excellence consider excellence as an outstanding performance level (Antony & Bhattacharyya, 2010).

In their conceptual study, Antony and Bhattacharyya (2010) investigated the relationship between organizational performance and organizational excellence of SMEs in India. They found that organizational excellence can be calculated based on the relationship between different indicators of performance. They examined the relationship between organizational performance and excellence based on data collected from 407 respondents in SMEs in India. Their findings suggested that organizational performance and

excellence could be measured by consolidating performance variables. Therefore, organizational excellence can be calculated based on the relationship between the variables of performance. Moreover, they found that organizational excellence helps managers to evaluate and differentiate organizations in better method that organizational performance.

In connection to this vein of research, Ooncharoen and Ussahawanitchakit (2008) conducted study to examine the relationship between organizational excellence and business performance of hotel business in Thailand. The findings of this study were based on a questionnaire survey of 278 hotels in Thailand. The results showed that organizational excellence has a significant positive influence on performance.

In this connection, Ciptono (2005) in his case study about the linkage between Deming's principle, world-class company, operational excellence, and company performance based on the 1332 questionnaire in 140 strategic business units in 49 oil and gas companies in Indonesia. The proposed model has been analyzed by using structural equation modeling (Amos). The results showed that the Deming's principle has significant positive and indirect effect on company performance. In other words, Deming's excellence model principle can enhance and affect organizational performance of a company.

The past research of the relationship between organizational excellence and organizational performance showed that excellence is precedence for any organization to achieve high performance. Moreover, the literature reveals that the impact of TQM, ERP, and EO on the organizational performance is still disagreeing; therefore, this study

suggested the organizational excellence variable could explain the mechanism to have a high effect.

Having determined the organizational excellence and organizational performance that are most suitable for this study, the next sections were devoted to giving and provide more detailed discussion regarding the TQM practices.

## **2.4 Total Quality Management (TQM)**

Total Quality Management (TQM) in today's changing business environment has become a main change that requires a transition in the organization's processes, culture, beliefs, and strategic priorities among others (Motwani, 2001). There is a numerous research in literature about TQM and its role in developing and enhancing performance and competitive advantage of the organization. The past research about TQM such as Crosby (1979), Deming and Juran (1986) changed the business philosophy worldwide (James, 2008). In addition, TQM represents a holistic approach in organizations' management and focus on organizational goals through quality improvement, meeting customer needs, productivity, and competitiveness, (Pfau, 1989).

### **2.4.1 TQM as a Management Philosophy**

Total Quality Management (TQM) is considered as a management philosophy that has been gained attention by many researchers (Ehigie & McAndrew, 2005). TQM philosophy emphasizes the role of external and internal customers and suppliers, and employees' involvement in pursuit of continuing improvement (Kanji, 2002; Oakland *et al.*, 2002).

There are a lot of researches in literature those show the importance of TQM strategy in service organizations (Saravanan & Rao, 2006; Yasin, Kunt, & Zimmerer, 2004); manufacturing organizations (Arawati, 2005; Sohal & Terziovski, 2000); small and medium sized organizations (Demirbag *et al.*, 2006; Sohail & Hoong, 2003); and in public service organizations (Nor Hazilah, 2004). Moreover, quality management has developed in many phases from quality by inspections, statistical quality control, and quality assurance to the current concept of total quality management (Prybutok & Ramasesh, 2005).

In today's global competition, TQM strategy has been achieved increasing interest among practitioners as one the main medium and tools for creating a sustainable competitive advantage (Williams, Wiele, Iwaardeen, & Visser, 2004).

#### **2.4.2 Definition of Quality and TQM**

Before going further in TQM definitions from the existing literature, some definitions about quality either in product or service will be discussed based on the literature of quality management. Quality is considered as one of the most important strategies or competitive priority for development of an organization (Sharma & Kodali, 2008). In addition, they pointed out that in today's global competition an organization needs to apply different quality strategies and methodologies in the form of quality control, quality assurance, quality systems and quality management. This means that an organization should implement total quality concept. Therefore, TQM philosophy will increase commitment to quality, and if it is applied correctly, will enhance performance and lead to an organization's competitive advantage (Sharma & Kodali, 2008).

According to Lyons, Acsente, and Waesberghe (2008), quality is more than accomplishment of client expectations and requirements, or providing client required deliveries, but it is a complete body of work and more than what the client expected.

While Ionica and Baleanu (2010) argued that quality has become the most important factor to achieve competitive advantage, and quality management is considered as a rebirth in organization management by focusing on excellence. In addition, movement of quality has gone through many transformations, inspection to prevention and quality control mode.

In relation to that, Adam, Corbett, Flores, Harrison, Lee, Rho, Ribera, Samson, & Westbrook (1997) argued that improving quality of products and services in organizations is a fundamental to business success. Furthermore, Reichheld and Sasser (1990) pointed out that quality is the most way to run a business and earn profit.

Similarly, Pakdil (2010) pointed out that organization can be successful by producing high-quality goods and services to increase organizational performance, not just only by increasing quantities, but by efficiency, quality, and high level advantage among other organization in the market. She added that TQM is one of these management strategies to achieve these goals.

In line with this view, Thiagaragan *et al.* (2001) argued that the emergence of quality to be a top priority strategic management in many organizations is due to global competition pressure to satisfy customers' demands who want to have better goods and services.

In addition to that, Deming (1986) mentioned that one important note about quality management that is establishing a mutual supportive relationship with customers, and backward relationship with suppliers that have important impact on customer satisfaction.

Deming (1986), Feigenbaum (1986), and Juran (1988) have defined quality according to customer needs, satisfaction, and expectations. Moreover, they concentrate on quality as "fitness for use".

#### **2.4.2.1 Product Quality**

According to Garvin (1987) the quality of product includes the following dimensions:

- Reliability to what extent a product will serve customer efficiency and effectively.
- Features that refers to the characteristics of the product's basic function.
- Conformance that refers to what extent a product has the right standards.
- Performance that refers to the product's operating characteristics.
- Serviceability that refers to the courtesy, speed, and ease of repair.
- Durability that refers to frequent use of the product.
- Aesthetics that refers to the appearance and impression of the product.
- Perceived quality that refers to the provider's reputation.

#### **2.4.2.2 Service Quality**

It is great to mention that TQM strategy has been originated in the manufacturing sector and later has been growing in service organizations as well (Sila & Ebrahimpour, 2005).

Lakhe and Mohanty (1995) pointed out that service organizations have so many characteristics. Service organizations produce intangible products and services and directly delivered to the customer. Therefore, they should be ready to deliver the service on time to satisfy their customers.

While reviewing the literature on service quality, there are two schools of thought (Camison, 1998). The first school focuses on service delivery. This school is led by Parasuraman, Zeithaml, and Berry (1985; 1988). The other school focuses on the content of services through technical differentiating from function. This school led by Gronroos and Gummesson (1988).

#### **2.4.2.3 Definition of TQM**

The concept of Total Quality Management (TQM) has been developed to enable organizations to compete in the intense global competition (Zakuan, Yusof, Laosirihongthong, & Shahrour, 2010). TQM is originated in the early 1970s in Japan (Yusuf, Gunasekaran, & Dan, 2007). From that time still there is a lack of agreement on the definition of TQM despite of the extensive literature regarding it. They also pointed out that TQM is a holistic organizational philosophy that includes three essential principles: total- which refers to the participation of every department and every person; quality – which refers to satisfy customers by meeting their needs and expectations; management- facilitate and enable conditions for total quality.

Quality management Literature contains so many TQM's definitions. For example, Pfau (1989) defined TQM as an approach for continuously improving the quality of services and goods delivered at all levels of the organization through the participation of

individuals. GAO (1991) defined TQM as a management philosophy that assist organizations to produce quality and efficient goods and services through improving product quality and increasing customers' satisfaction. In addition to that, Flynn *et al.* (1994) defined TQM as the integrated approach to have high quality outcomes through sustaining and maintaining continuous improvement to meet the needs of customers. Similarly, Kumar, Choisine, Grosbois, and Kumar (2009) defined TQM as a holistic approach that integrates all activities inside organization to meet and satisfy the needs and expectations of customers.

Furthermore, Zairi (1994) argued that TQM ensures that the customer's voice is always matched by the processes' voice. He added that creating better planning; better design, better internal and external focus, strengthening weak processes and protecting strong area can be achieved through TQM.

There are other definitions in the literature for TQM based on its principles. For example, Abas and Yaacob (2006) defined TQM strategy as a set of critical factors or quality management actions that practiced by an organization to achieve excellent organizational performance. Similarly, Anderson, Rungtusanatham, and Schoerder (1994) defined strategy of TQM as a holistic approach quality of overall organization through major principles such as leadership, effective process management, continuous improvement, customer satisfaction and involvement, product and service design, and involvement and training of employees.

In line with this view, Oakland (1989) defined TQM as an approach for improving effectiveness, flexibility, and the competitiveness of an organization. Moreover, TQM

philosophy emphasizes the role of external and internal customers and suppliers, and the employees' involvement in pursuit of continuous improvement (Oakland *et al.*, 2002; Kanji, 2002; Chang, 2006).

In relation to that, Porter and Tanner (2001) defined TQM as a business process that emphasizes on improving the organization's efficiency, effectiveness, and meet customers' needs by involving people in improving activities. On the other hand, Yang (2005) added more details by defining that TQM as an integrated management philosophy and a set of practices that focuses on continuous improvement, reducing rework, meeting customer's requirements, increased employee involvement, long-range thinking, process redesign, team based problem solving, competitive benchmarking, closer relationship with suppliers, and constant measurement of results. Additionally, Kanji (1998) defined TQM as a management philosophy that enhances an organizational culture related to customer satisfaction through continuous improvement.

However, there are many definitions for TQM, most of them are agreed that it is a management tool that can enhance the organizational performance, satisfy customers, and implement the continuous improvements in the whole organization.

### **2.4.3 Critical Success Factors of TQM**

Critical success factors (CSFs) has been defined by Oakland (1995) as the critical areas inside organization to be performed to achieve its vision, mission and goals by categorization and examination of their impacts.

While reviewing literature regarding the CSFs and their relation with TQM, there are numerous CSFs that can be identified as crucial to have successful implementation of TQM (Salaheldin, 2008).

In his contribution to this field, Salaheldin (2008) distinguished 24 CSFs in his empirical study about 297 SMEs in Qatar. His model divided into three levels: strategic, tactical, and operational factors. These CSFs are: leadership, organizational culture, top management support, continuous improvement, benchmarking, quality goals and policy, team building and problem solving, employee empowerment, employee involvement, employee training, use of information technology, supplier quality, supplier relationships, assessment of performance of suppliers, product and service design, enterprise performance metrics for TQM, process control, customer orientation, management of customer relationships, resources value addition process, realistic TQM implementation schedule, customer and market knowledge, resources conservation and utilization, inspection and checking work, eigenvalues, percent of variance explained, and cumulative percent.

In line with that, Yusof and Aspinwell (2000) analyzed TQM CSFs in SMEs. They found that CSFs for TQM implementation are management leadership, improvement tools and techniques, continuous improvement system, supplier quality assurance, measurement and feedback, system and processes, human resource development, work environment and culture, and education and training.

Similarly, Hodgetts, Kuratko, and Hornsby (1999) found the CSFs of TQM implementations in SMEs are: customer focused, top management involvement, generating new ideas, employee training, and employee empowerment.

In relation to that, a research study by Dayton (2003) tried to determine whether TQM's CSFs identified by Black and Porter (1996) could be considered as important CSFs in USA small and large firms. These CSFs are: customer and people management, customer satisfaction, communications, supplier partnerships, strategic quality management, external interface management, operational quality planning, teamwork structure for improvement, and quality improvement systems.

Other empirical study by Rahman (2001) in 53 Australian SMEs. He found that CSFs for successful implementation of TQM are: leadership, employee empowerment and employee involvement, strategy and planning, information and analysis, employee training and development, and customer management.

In his empirical study in Turkish SMEs, Demirbag *et al.* (2006) identified seven CSFs of TQM practices, they are: role of top management, quality data and reporting, training, employee relations, quality policy and process management, and supplier quality management.

Kanji and Wallace (2000) identified ten practices of TQM, namely, top management commitment, performance measurement and quality information, employee involvement, process measurement, zero defect, customer satisfaction and focus, human resource management, teamwork, quality assurance, and communication.

From the above mentioned studies, we can notice that there are different critical success factors those can determine and measure the successful implementation of TQM and their degree to enhance and improve organizational performance.

#### **2.4.4 Dimensions of TQM used in this study**

In the quality management literature, there is many researches have been conducted TQM practices. Most of these research studies explored the relationship between TQM and performance (Corredor & Goni, 2011). The relationship between TQM and performance, will eventually benefit all organization types (Sila and Ebrahimpour, 2002). In addition, Studies showed that TQM is positively associated with outcomes of performance, such as profitability and financial performance (Cummings & Worley, 1997), and with human outcomes, such as customer satisfaction, employee satisfaction, and employee relations (Lawler, Ledford, Mohman, & Tenkasi, 1995).

As seen in the previous section that TQM has many CSFs which differ from one study to another based on the context of the study. In spite of the plenty of TQM CSFs, there are still some of them are importance and shared among most of previous study. This study investigates the most effective TQM CSFs that suite the context of public sector. Thus, management leadership, strategic planning, human resource management, service design, information and analysis, continuous improvement, and benchmarking will be used only to study the multidimensional effect of TQM. The following few lines will discuss them in details.

#### **2.4.4.1 Management Leadership**

Leadership and top management commitment is considered as one of the most crucial factors for TQM in the literature (Singh & Sushil, 2012). Top management has to lead the process, take the charges, and provide facilities and work directions (Vouzas & Psychogios, 2007). There are many researchers in the literature who determine leadership as a very important factor (Bhat & Rajashekhar, 2009; Faisal *et al*, 2011; Mashari *et al.*, 2005; Oakland & Tanner, 2007; Vouzas *et al.*, 2007). Kanji (2001) considered top management commitment as the main driver of business excellence.

Motwani (2001) imagined TQM as a house and the top management commitment as the base and foundation for this house. Therefore, with a strong base the house will not stand properly. In addition, Zairi (1994) pointed out that leadership as a TQM element comprises providing the direction and vision to employees to follow, improving communication skills, improving of information ability sharing, bringing enlightenment, and enhancing synergies value added. Moreover, leadership plays a significant role in leading the entire organization to adopt and implement TQM practice successfully (Idress, 2011). From another point of view, leadership is a combination between intangible and tangible resources such as information and knowledge (Amit & Schoemaker, 1993). Hendricks and Singhal (1997) argued that the high degree of leadership and top management commitment and support to TQM implementation, the higher degree of organizational improvement.

#### **2.4.4.2 Strategic Planning**

Strategic management contains all organizational strategies and activities that formulate, implemented, and evaluated to achieve the organizational objectives (Srinidhi, 1998). The importance of strategic management comes from its crucial role in directing organizations to achieve the planned goals and objectives. Many researchers considered strategic planning as one of the most important tool when implementing any new strategy or practice such as TQM. Implementation of TQM without strategic planning is like sailing in ocean without paddles. Before implementing TQM in any organization, vision, mission, and strategic goals should be determined (Tari, 2005).

There are many researchers in the literature who realized the important role of strategic planning when implementing TQM practice (Sila & Ebrahimpour, 2002). The importance of strategic planning has been realized by some researchers. They claimed that the organization capability to survive in an uncertain business environment can be resolved by strategic planning policies (Chenhall, 2005).

#### **2.4.4.3 Human Resource Management**

Human resource management is also one of the significant critical factors that help in successful implementation of TQM. HRM is another element of TQM critical successful factors that includes employees' empowerment, employees' involvement, and employees' training (Ahire *et al.*, 1996). According to Akdere (2006) implementation of TQM through employees should create positive relationship among them and lead to organizational competitiveness.

In this study three sub-dimensions involved and discussed. One of them is employee involvement. Employee involvement is the employee participation in all levels organizational activities which is the key to successful TQM implementation for the sake of solving problems and increasing the flow of knowledge and information (Vouzas *et al.*, 2007). The direct involvement of employees in quality management system, visions, and goals will differently lead for success of TQM program (Motwani, 2001). The idea and reason behind involving employees in the quality system is that the innovative ideas comes from the one who actually doing the job, i.e. employee (Thiagarajan & Zairi, 1997). Several authors confirm the positive effect of employee involvement on the TQM implementation process (David & Bishnu, 2009; Enrique, Tari, Molina, 2002; Faisal *et al.*, 2011; Oakland & Tanner, 2007; Thiagarajan & Zairi, 2007).

Another important factor that falls under HRM is employee empowerment. It refers to the authority and autonomy that given to employees working in different levels inside the organization. This empowerment gives employees a sense of pride of self-improvement, workmanship, innovative ideas, and self-inspection (Thiagarajan & Zairi, 1997). In addition, empowered employees are necessary for employees as self-directing and self-managing team in groups of different organizations. As a result of giving power to employees, a sense of belonging towards the organization and do their best to have innovative ideas and zealous for doing job (Singh & Sushil, 2013). The importance of employee empowerment has been assured by many researchers (Bhat & Rajashekhar, 2009; David & Bishnu, 2009; Thiagarajan & Zairi, 1997).

The most important factor that more focused by researcher is training. Employees' training and education are considered vitally important investment for TQM success

(Baidoun, 2003). Educated and training employee is an organizational asset. Knowledge and ability of practicing TQM is a must through continuous training. Training as a CSF for TQM is suggested by many researchers (Faisal *et al.*, 2011; Vouzas *et al.*, 2007)

#### **2.4.4.4 Service Design**

Service design is the important TQM factor that related to customer. By designing the service well, the customers' satisfaction increase and result positive reputation among them about the organization, and at the end enhance organizational performance (Lakhe & Mohanty, 1995). In other words, good service design results ultimately better service and in turn reflect on improvement of the organizational processes and lead to achieve the optimum competitive advantages. In the literature, many researchers found a positive relationship between service design and organizational performance (Anderson *et al.*, 1994; Flynn *et al.*, 1995).

#### **2.4.4.5 Information and Analysis**

According to Ahire *et al.* (1996), information and analysis are among the most significant TQM CSFs that is directly result a positive relationship with organizational performance. Information and analysis is a combination of software, hardware, procedures, and people (Kartha, 2004). In the current daily change technology environment, the communication revolution compels organizations to employ the last developed technology to be able to compet with other rivals in the market and to respond quickly to this unstable environment. In the literature, there are many studies that confirmed the positive effect of

information and analysis on organizational performance (Ahire *et al.*, 1996; Powell, 1995; Saraph *et al.*, 1989; Sila and Ebrahimpour, 2005).

#### **2.4.4.6 Continuous Improvement**

Continuous improvement is the main aim and philosophy behind TQM implementation beside customers' satisfaction. It refers to desire for continuing improving all aspect in the organization and searching for never ending improvement to have better methods for improving all processes including inputs and outputs (Burli, Kotturshettar, & Dalmia, 2012). By improving organizational processes, organizations will be able to generate innovation, improve internal and external processes, meet customers' expectations, and create precious value to all stakeholders. TQM literature indicated the positive relationship between continuous improvement and organizational performance (Anderson *et al.*, 1994; Christos *et al.*, 2010; Flynn *et al.*, 1995) and long-term competitive advantages (Yusuf *et al.*, 2007).

#### **2.4.4.7 Benchmarking**

As a continuous systematic approach, benchmarking is one of the important CSFs of TQM to measure the key business process against the best practice of the industry (Singh & Sushil, 2012). Therefore, organizations cannot accomplish the universal and global standards unless benchmarking their business processes (Motwani, 2001). Baidoun (2003) considered benchmarking as the catalyst for BPR, general changein organizational action and thinking, improve the operation performance, powerful improvement instrument for business units, processes, and for the whole organization. In other words,

benchmarking is a tool for innovation rather than imitation (Thompson & Cox, 1997). Therefore benchmarking is a technique used by organizations to compare themselves with other leading competitors in the same industry to improve some processes such as cost saving, customers' and employees' satisfaction, and process efficiency.

Benchmarking has been realized by many researchers who suggested the effect results of using it (David & Bishnu, 2009; Faisal *et al*, 2011). The effect of benchmarking on organizational performance has been confirmed by many researchers (Ahire *et al.*, 1996; Arawati, 2005; Powell, 1995; Terziovski & Samson, 1999), and other considered benchmarking a dynamic tool in TQM implementation and development processes (Sinclair & Zairi, 2000).

#### **2.4.5 Soft and Hard TQM**

Total Quality Management (TQM) consists of different critical success factors as been discussed before. In the literature review, CSFs includes philosophy development, process management, top management and commitment and leadership, benchmarking, customer involvement and satisfaction, quality measurement, supplier quality management, employee empowerment, training, and information analysis (Foster, 2007; Powell, 1995). Ho, Duffy, and Shih (2001) and Rahman and Bullock (2005) classified TQM's CSFs into two categories as follows:

##### **2.4.5.1 Soft TQM**

Soft TQM elements are essentially dimensions of human resource management (HRM) (Rahman & Bullock, 2005). On the other hand, Lewis, Pun, and Lalla (2006) pointed out

those soft factors of TQM are related to behavioral aspects and deal with people such as education and training, leadership, empowerment, loyalty, teamwork, human resource utilization, customer focus and satisfaction, communication, contacts with supplier, performance awards, social responsibility and quality culture.

Similarly, Rahman and bullock (2005) concluded that soft TQM factors are behavioral aspects human management which include shared vision, workforce commitment, cooperative supplier relations, customer focus, personnel training, and the use of teams.

In a similar way, Fotopoulos and Psomas (2010) identified soft factors of TQM as follows: leadership, employee management and involvement, customer focus, strategic quality planning, supplier involvement, knowledge and education, and process management. On the other hand, Madi *et al.* (2009) suggested six soft factors of TQM which are more related to Malaysian Manufacturing firms that include customer focus, training and education, management commitment, employee involvement, supplier relationship, and reward and recognition. Lastly, Yunis, Jung, and Chen (2013) pointed out that soft TQM has higher effect more than hard TQM on performance and competitive strategy formulation.

#### **2.4.5.2 Hard TQM**

Hard TQM has strong relationships with the continuous improvement organization as a total system (Sitkin *et al.*, 1994). While reviewing the management literature, it suggests that hard elements of hard TQM have a deep impact on organizational performance (Rahman & Bullock, 2005). Moreover, hard factors of TQM are system-oriented and they

are easier to quantify (Lewis, Pun, & Lalla, 2006). Additionally, Yunis *et al.* (2013) argued that previous literature reported mixed findings regarding the association between hard TQM and performance. Therefore, it deals with quality systems, improvement and innovation, benchmarking, quality assurance, flexibility, just in time, information and performance measurement, zero defect, process control and product/service design, strategic planning, and process management. In addition to that, Fotopoulos and Psomas (2009) identified hard TQM as management of quality and technique such as scatter diagram, relations diagram, run chart, affinity diagram, cause and effect diagram, control charts, force-field analysis, effect analysis, and quality function deployment and failure mode.

#### **2.4.6 Some Popular National Quality Awards**

In today's competitive business environment, quality has become the key for any organization to gain competitive advantage among competitors (Tan, 2002). Therefore, the trend nowadays towards globalization of business which encourage governing authorities in many countries around the world to establish their own national quality awards (NQA) for the purpose to recognize, support, and promote total quality in the host countries (Tan, Lin, & Hung, 2003). In addition, NQA is established to gain the following goals (Tan *et al.*, 2003):

- To promote awareness of total quality and raising quality and productivity.
- To provide guidelines for assessment and continuous improvement.
- To serve in promoting competition and development of the economy in the host country.

History of NQA development recognizes three awards those plays a key role in the quality revolution in USA, Europe, and Japan. They are the Malcolm Baldrige National Quality Award (MBNQA), the European Quality Award (EQA), and the Deming Prize (DP) (Tan, 2002). Depending on these awards many countries modeled their awards based on them. Moreover, these quality awards are usually administrated by government with participation of examiners and judges from parties in public and private business organization (Tan, 2002). Furthermore, purposes of NQAs are to encourage organization to understand and evaluate their present performance to be developed and target it in the future, and to help organizations to identify their areas of improvement (Lee, 2002).

Therefore, the following parts discuss in brief some of most important quality awards namely; the Malcolm Baldrige National Quality Award (MBNQA), in the USA, the European Quality Award (EQA), the Deming Award (DA) in Japan, the Dubai Excellence Quality Award in UAE, the United Kingdom Quality Award (UKQA) in the UK, the Canadian Awards for Excellence (CAE) in Canada, and the Quality awards in Malaysia (PMQA).

#### **2.4.6.1 Malcolm Baldrige National Quality Award (MBNQA)**

The congress in the USA passed the Malcolm Baldrige National Quality Award in 1987 to help companies to achieve their long-term effects. It has three eligibility categories, including service, manufacturing, and small business companies (Puay, Tan, Xie, & Goh, 1998). In addition, the assessment of this award consists of an initial write up application followed by visiting the site and at the end evaluation and review. There are total six

awards in each category, and the winning companies share their information among other companies about their successful quality strategies (Puay *et al.*, 1998).

According to Davis, Marcos, and Stadning (2005), MBNQA consists of seven categories and many items; therefore the categories are: leadership, strategic planning, customer and market focus, information and analysis, human resource management focus, process management, and business results.

#### **2.4.6.2 European Quality Award (EQA)**

The European Quality Award (EQA) was established in 1991 in Europe with support the European Organization for Quality and European Commission (Puay *et al.*, 1998). EQA consists of two categories, the European Quality Award and the European Quality Prize (Conti, 2007; Puay *et al.*, 1998). In addition, the former is awarded to the best successful companies in total quality management in Western Europe, and the latter is awarded to companies those fulfill excellence in quality management and continuous improvement.

EQA has nine criteria for the European Quality Management Excellence Model, they are: policy and strategy, leadership, partnership and resources, people, processes, people results, society results, customers' results, and key performance results.

#### **2.4.6.3 Deming Award (DA)**

Deming Application Prize was established in Japan in 1951 as the first quality award in the world which enhances other countries like the USA and Europe to establish their awards, i.e. MBNQA and EQA. This prize is awarded to organizations that have a

systematic application of quality principles (Lee, 2002). In addition, Laszlo pointed out that the Deming prize is given to excellent organizations in the application of the plan-do-check-act (PDCA) cycle.

#### **2.4.6.4 Dubai Quality Award Model**

"Our journey of development has been and will remain a race for excellence; a race to consolidate Dubai's position as an evolving, leading and unrivaled contender for the title of Middle East's financial commercial capital" (HH Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President and Prime Minister and Ruler of Dubai). These few words show the inspiration of Sheikh Mohammed towards achieving excellence by encouraging and stimulating not only private sector companies but also public government organizations involved in excellence and quality awards program to attain and practice best practices and achieve excellence performance according to criteria has been made by Dubai government.

Dubai government established some awards to enhance performance not only for the purpose of benefits from awards but by identifying areas for improvement. One of these awards is Dubai Government Excellence Programme which was established by Dubai government to improve and enhance performance in Dubai's government organizations (Dubai.ae, 2012). There are other awards programs such as Dubai Quality Award, Dubai Service Excellence Scheme, Emirates Quality Mark, Dubai Human Development Awards, and Mohammed Bin Rashid Al Maktoum Business Awards.

Dubai Quality Award (DQA) was established in 1994 by Dubai's Department of Economic Development, where Sheikh Mohammed is the Chairman (The Media Office of Dubai Government, 2012). The DQA was driven as an instrument to improve standards of companies' business operating in Dubai. The award comprises different sector of Dubai's economy such as services, manufacturing, finance, construction, trade, and professional. Furthermore, the DQA is based on the Excellence European Model (EFQM) which was applied successfully in private and public organizations since 1992. According to EFQM, all nine criteria have been applied in DQA.

The DQA has three different categories, they are: The Dubai Quality Award Gold Category (GOLD), The Dubai Quality Award (DQA), and The Dubai Quality Appreciation Programme (DQAP).

#### **2.4.6.5 United Kingdom Quality Award (UKQA)**

The British Foundation in 1994 established the United Kingdom Quality Award (Puay *et al.* 1998). Moreover, UKQA grants its prizes to any organization in public, private, voluntary sectors.

In addition to that, UKQA consists of four categories, they are:

- Business with 250 employees or fewer.
- Business with 251 employees or more including subsidiaries.
- Organizations of public and voluntary sectors with 250 employees or fewer.
- Organization of public and voluntary sectors with 251 employees or more.

However, the assessment process for UKQA is similar to the MBNQA.

#### **2.4.6.6 Canadian Awards for Excellence (CAE)**

Canadian Awards for Excellence (CAE) was established in 1997 in Canada which encompasses other three separate awards: the Entrepreneurship Award, the Quality Award, and the Innovation Award. It is equivalent to the National Quality Award (Puay *et al.*, 1998).

Furthermore, it has eight categories, four private sector categories (small-medium and large manufacturing, service small-medium and large), three public sector categories (government, education, and health care), and one category for non-profit organizations. Similarly, a criterion of the selection process in this award is similar to the MBNQA.

#### **2.4.6.7 Quality Awards in Malaysia (PMQA)**

The Malaysian government established many awards for management, efficient implementation of information and communication technology, and innovation to enhance the efficiency and quality of public sector performance (The Malaysian Government Official Website, 2010).

The following are some awards of PMQA:

- Prime Minister's Quality Award (1990)
- Quality Control Circles Award (1984)
- Premier Information Technology Award
- Public Service Innovation Award (1991)

- District Office Quality Award (1992)
- Innovation Award between public and private sector as Joint-Research.
- Financial Management Quality Award (2001)

The Prime Minister Award is regarded the most popular award among the others which has seven criteria when evaluating of performance excellence, they are: leadership, the process of strategic planning, the use of information in quality management, quality assurance output, customer satisfaction, human resources, and quality innovation improvement project.

#### **2.4.7 Total Quality Management (TQM) and Organizational Excellence (OE)**

History of Total Quality Management (TQM) and its development shows us that quality movement has gone through several transformations (Inoica & Baleanu, 2010). In the manufacturing process, this transformation from Inspection to prevention mode is considered to be the most important stage in building quality. Nowadays, the concentration is not just in the manufacturing process but for all activities that more related to internal and external customers (Inoica & Baleanu, 2010). Moreover, TQM core principles encourage a business practice that will increase productivity, satisfy customers, enhance quality of output, and reduce costs. Therefore, TQM practices help organizations to enhance business excellence (Lee, 2002). The figure below shows the history of TQM from inspection to Business excellence.



Figure 2.2  
*Life Cycle of Quality*  
 Source: Inoica and Baleanu (2010)

The connection between business excellence and TQM has been discussed by several writers who suggested a strong relationship between them.

In studying TQM implementation in the manufacturing process, Sharma and Kodali (2008) reviews 28 awards, models and framework and made a comparative analysis to identify TQM elements. The outcome of their research is a framework implementation of TQM elements for sustaining manufacturing excellence. Therefore, TQM excellence is considered as an essential criterion for achieving manufacturing excellence.

In relation to that, Ioncia and Baleanu (2010) argued that the underlying principles of the EFQM Excellence Model have implicit and explicit connections with the basic principles of TQM. Furthermore, they added that the continuing journey to achieve the highest level of organizational performance is the journey that implies a continuous process of quality management.

In relation quality management to knowledge management, Lyons, Acsente, and Waesberghe (2008) investigated how quality management and knowledge management can be integrated in operational model and framework to enhance excellence. Their

finding presents that learning approaches for implementing the quality framework and an integrated knowledge management and for engaging both leadership and workforce and use of knowledge management tools.

In the same vein, Hafeez, Malak, and Abdellmeguid (2006) analyzed and compared 10 notable authors regarding the essential characteristics of the TQM philosophy based on a survey questionnaire collected from 40 European organizations. The results indicate that organizations have difficulty in translating TQM theory into practice. In addition, it is seen that organizations understand institutional and commercial demands to implement TQM as a business strategy, and few benchmarking emerged from best practice.

In connection to that, Lee (2002) in his case study examined how business excellence can be sustained through a framework of best practice in TQM based on data collected from face-to-face and in-depth interviews of organization members who were responsible for business to become Singapore Quality Award winners. The result of this research could be used as guidelines for any organization that intend to implement and sustain TQM to achieve business excellence.

In relation to the role of ISO9000 and TQM in achieving business excellence, Hassan, Ali, and Lam (2007) investigated the impact of implementing ISO9000 and TQM together and how this can result competitive advantages and business excellence for organizations. Based on personal interviews of six companies, that certified to ISO 9000, their findings shows that companies that implement ISO 9000 and TQM at the same time might expect to have advantages in productivity, customer satisfaction, delivery, and product quality. In summary, the role of TQM in enhancing business and organizational

excellence was witnessed by many researchers. Most business excellence model were based on TQM and some of quality models changed to excellence models.

#### **2.4.8 Total Quality Management (TQM) and Organizational Performance (OP)**

In the literature on quality management, there is a plenty of research work that conducted TQM practices. Therefore, a great deal of empirical research explores the relationship between TQM and performance (Corredor & Goni, 2011). Sila and Ebrahimpour (2002) pointed out that regarding the relation between TQM and performance, the majority of research confirms that TQM philosophy adoption will eventually benefit all organization types. In addition, Studies showed that TQM is positively associated with outcomes of performance, such as profitability and financial performance (Cummings & Worley, 1997), and with human outcomes, such as customer satisfaction, employee satisfaction, and employee relations (Lawler, Ledford, Mohman, & Tenkasi, 1995).

In relation to that, Sila (2007) revealed that while measuring the relationship between organizational performance and TQM, there are some variables of TQM that should be put into consideration, they are: leadership, information and analysis, process management, customer focus, human resource management, organizational effectiveness, financial and market results, and supplier management.

There are some authors who conducted a comprehensive literature review about the previous research. In their study about TQM strategy, Ahire *et al.* (1995) used MBNQA and EQA criteria. They reviewed 226 research works such as empirical, case studies, and conceptual between 1970 and 1993 that related to the literature on quality management.

They found that most of this literature was conceptual and the empirical research was not at a good level. Therefore, they suggest intensifying the empirical work that related to TQM strategy.

In another perspective, Fynes (1998; 1999) reviewed 20 empirical studies of TQM literature using the critical success factors of TQM. The critical factors of TQM he used are: quality information, top management commitment, work management, process management, customer involvement, product design, and supplier involvement.

In the relationship between TQM and organizational performance, Yong and Wilkinson (1999) reviewed 15 researches that revealed positive and negative relationships between organizational performance and TQM strategy, however, these studies conducted in different countries. They concluded that TQM strategy should be implemented fully to achieve organizational performance. Therefore, TQM should be an integral part of organizational operations.

In connection to that, Sila and Ebrahimpour (2002) conducted a literature review that related to quality management. Therefore, they reviewed 347 research studies that have been published between 1989 and 2000. In addition, they identified 25 critical factors of TQM that were the framework for their study. Their literature review revealed that customer satisfaction and focus was the most factors discussed. The next factor followed by employee leadership and training and top management commitment. Moreover, they mentioned that the quality management in the service sector is more difficult to manage because of the intangibility of services. It is great to mention that the six studies out of

347 research work was conducted in the middle east including, UAE, Qatar, and Saudi Arabia which indicates a lack of researches in this region.

In relation to that, Baker (2003) reviewed studies in the period from 1987 to 2002 by using meta-analysis. He stated that empirically supported the relationship between TQM practices and organizational performance.

In their contribution to this field, Hendricks and Singhal (1997) carried out a study to understand if implemented TQM can improve operational performance of organizations that winning quality awards. The examination was over a 10 years, from 6 years before winning the award and 3 years after the winning. The results showed that the organizations in test sample increased their expenditure more than others, and higher growth in both total assets and employment.

Similarly, Corredor and Goni (2011) used universal approach to test and explore the relationship between TQM and organizational performance. They used a sample from Spanish organizations that received TQM prizes between 1997 and 2003. Their findings showed that organizations using a TQM system are not necessarily better than other. In addition, TQM pioneers experience performance wins and gains because of the early system implementation.

In his review the TQM literature and its critical factors, Tari (2005) identified nine critical factors they are: quality planning, management commitment and leadership, continuous improvement, work team and communication, management based on facts, human resource management including training, organizational social and environmental

awareness, and cooperation with suppliers. In addition, he found that TQM and HRM are highly correlated with each other where HRM is the basis of success of TQM.

The mediating role of TQM and its effectiveness in performance has been studied by many researchers. Fuentes-Fuentes, Albacete-Saez, and Liorens-Montes (2004) studied the relationship between TQM principles, environmental characteristics, and organizational performance. They collected data from quality managers in 273 Spanish companies. They used structural equation modeling and casual model to test the model. The result showed that the environmental characteristics influence TQM implementation and in turn influence the operational, financial, and human-aspects of organizational performance.

In connection to that, Feng, Prajogo, Tan, and Sohal (2006) studied the mediating effect of TQM as a mediator between organizational performance and organization strategy based on data collected from 194 middle and senior managers from Australian companies. They used structural equation modeling to test the casual model. The result supported the partial mediating role of TQM between the strategy of business and organizational performance, and TQM needs to be complemented by other resources to be more effectively to achieve high organizational performance.

Recently, Molina-Azorin, Tari, Claver-Cortes, and Lopez-Gamero (2009) pointed out that quality management development theory was based on three sources, namely, the National quality awards, the prescription of the quality gurus, and measurement studies. In addition to that, while reviewing the research work they found that the successful implementation can cause improvements in organizational performance.

#### **2.4.8.1 Total Quality Management (TQM) and Performance of SMEs**

Small and medium sized enterprises (SMEs) play a very crucial role in the growth of the economy (Demirbag *et al.*, 2006). According to UNCTAD (1993), SMEs account for more than half of the employment and share by adding value in most countries. For example in Turkey SMEs constitute 99 per cent of most business establishment and employ more than 53 per cent of employees and workers in the manufacturing sector (Taymaz, 1997). In addition, Ghobadian and Gallear (1996) argued that SMEs is considered the blood of life in the current global economy where they play a very dominant role in most developing and developed countries. According to that researchers focus more on the factors that enhance SMEs performance. Therefore, there is a growing research work related to TQM in SMEs (i.e. Bayati & Taghavi, 2007; Fening *et al.*, 2008; Temtime & Solomon, 2002). It has been argued that TQM can help SMEs to be more efficient (Ahire & Golhar, 1996). In addition, implementation of TQM in SMEs can help them to achieve the maximum advantage of the capabilities of their human resources, and increase competitive advantage.

While reviewing the current literature regarding the implementation of TQM practices, most of literature was on TQM implementation in large manufacturing firms and there is little attention to this implementation in SMEs (Rahman, 2001). In addition, many studies about TQM implementation in SMEs were case studies in different countries such as Abdullah (2010) in Malaysia; Ghobadian and Gallear (1996) in the UK; and Tannock, Krasachol, and Ruangpermpool (2002) in Thailand.

Demirbag *et al.* (2006) examined the relationship between TQM critical factors and organizational performance based on empirical study of 163 SMEs in Turkey. They used Exploratory Factor Analysis to identify seven critical factors, they are, role of top management, quality policy, quality data and reporting, employees' relations, training, process management, and supplier quality management. The result supported the positive relationship between non-financial performance and TQM critical factors. Moreover, the non-financial performance can play a mediating role between financial performance and TQM practices.

The relationship between TQM practices and organizational performance has been studied by many writers. Fening, Pesakovic, and Amaria (2008) investigated this relationship of SMEs in Ghana by using the MBNQA variables. They collected data from 116 SMEs in all sectors in Ghana. Their conclusion revealed that there are positive relationships between the seven management factors used in this study namely, strategic planning, customer and market focus, leadership, quality process management, human resource management, information and analysis, and business results. It is important to say that this study found that the most positive relationship was between business performance and human resource management of SMEs.

In another perspective, Salaheldin (2009) in his empirical study of 139 Qatari SMEs classified TQM critical factors into three categories, they are, strategic, tactical, and operational factors. His findings revealed that there is a significant impact of TQM factors on organizational and operational performance of SMEs. In addition, the study

stressed the important role of the strategic factors in the successful TQM implementation in SMEs.

Fotopoulos and Psomas (2010) investigated the relationship between TQM factors and organizational performance based on data collected by 370 questionnaires from Greek companies. Their findings showed that these TQM factors are affecting organization's performance. In the same stream line, Valmohammadi (2011) investigated the TQM-Organizational performance relationship in Iranian manufacturing SMEs. The data collected from 65 Iranian manufacturing SMEs. The results revealed that there is a significant relationship between TQM practices and organizational performance in manufacturing SMEs. In addition, he found that leadership plays very important role in enhancing performance in Iranian SMEs.

In relation to that, earlier there was an attempt from Anderson and Sohal (1999) to investigate the relationship between TQM and organizational performance. They used data collected from 62 SMEs in Australia. Their framework was adopted from Australian Quality Award. Their finding showed that policy and planning practices, strategy, people management, and information analysis practices didn't differ across various outcomes. In addition, the findings showed that leadership practices were greater on quality services and products than the flexibility of delivery.

In connection to that, Pinho (2008) examined the relationship between TQM practices and organizational performance based on data collected from 135 Portuguese SMEs. His study showed that the quality assurance system, measuring results, leadership initiatives, and top management training factor are the most factors that influence SMEs'

performance. However this study supported that innovation and customer orientation significantly impact the performance of SMEs, the results also showed that the impact of customer orientation and TQM on innovation and performance of SMEs was not supported.

In their contribution to the same field, Gadenne and Sharma (2009) investigated the relationship between soft and hard quality management factors and SMEs' organizational performance in the Australian context. For this purpose they identified six critical factors based on data collected from 119 Australian SMEs. These six factors are: continuous improvement, employee and customer involvement, benchmarking and quality measurement, top management philosophy, efficiency improvement, and employee training. The result confirms that TQM practices impact organizational performance. In addition SMEs should have a combination of soft and hard TQM factors to have positive effects of the overall organizational performance.

In the literature of TQM practices, Lee (2004) investigated empirically the effect of TQM implementation on organizational performance in Chinese SMEs. 112 were the collected data from SMEs in China. The results showed that there is a positive relationship between TQM and organizational performance in SMEs.

In line with that, there are differences in the organizational performance of ISO9000 certified and non-certified SMEs. On one hand, Sohail and Hoog (2003) studied 101 Malaysian SMEs where the results showed that there is a significant difference. On the other hand, Rahman (2001) collected data from 250 Australian SMEs where the results confirmed that there is no significant difference.

In the field of organizational design, Garcia-Bernal and Ramiraz-Aleson (2010) examined the relationship between TQM benefits and organizational performance based on organizational design. Their results showed that TQM when consistent with organizational design postulates can increase the organizational performance benefits of TQM.

#### **2.4.8.2 TQM and Performance of Manufacturing Organizations**

Total Quality Management (TQM) is considered a management philosophy which aims to assist organizations in producing quality, goods, and services efficiently (Pakdil, 2010). It is great to mention that a TQM practice has its origin in production industries to improve quality of products, and to be a source for competitive advantage in both service and manufacturing organizations (Kaynak, 2003; Sila & Ebrahimpour, 2002). In addition, TQM has been adopted in many manufacturing organizations in the last few years to compete in the global market characterized by service attributes and improved products (Chenhall, 1997). Therefore, TQM has been practiced in 93% of the largest 500 corporation in the USA (Powell, 1995). In addition, Kim and Miller (1992) argued that quality is considered one of the top five competitive priorities of manufactures in the USA.

In the literature of TQM, most of studies argued that improving quality will increase productivity, satisfy customers, and reduce manufacturing defects (Dale & Wan, 2002). Moreover, TQM was originated in production processes before spread in other areas. Therefore, TQM practices and principles have been applied beyond production to include areas such as human resources (Cardy & Dobbins, 1996), information system (Fok, Fok,

& Hartman, 2001), marketing (Hurley, Gropper, & Roma, 1996), project (Jung & Wang, 2006), supply chain (Forker, Mendez, & Hershauer, 1997).

While revising the empirical research related to TQM and its impact on organizational performance, there are varying and opposite results. In one hand, some studies confirm the positive impact of TQM on organizational performance (Douglas & Judge, 2001; Flynn *et al.*, 1995; Sila & Ebrahimpour, 2005). On the other hand, some other studies conclude the failure of TQM practices to achieve the desired performance (Dooyoung, Kalinowski, & El-Enein, 1998). For this contrary in results, many authors carried out a literature review to discover and examine the previous studies, and to have more examination about the relationship between TQM and organizational performance.

For example, Nair (2006) undertook a meta-analysis study of published research between 1995 and 2004. He examined the TQM factors that were correlated with organizational performance, and examined the moderating variables that may influence TQM-organizational performance relationship. The result confirmed the effects of some factors of TQM on the overall organizational performance such as leadership, process management, people management, and customer focus. In addition, this study also supported the role of moderating variables in the relationship between TQM practices and organizational performance such as an organizational structure.

In relation to that, Sila and Ebrahimpour (2005) reviewed literature of TQM and its impact on organizational performance, and then investigated this relationship empirically based on a survey questionnaire collected from 226 USA manufacturing organizations. Findings showed that the number of articles that empirically supported the positive relationship between TQM and organizational performance are more than the number of

articles that found negative results on that relationship. In addition to that, the empirical study showed that TQM critical factors should be implemented as a whole to achieve the desired results.

In the same line of research, Samson and Terziovski (1999) investigated the relationship between TQM and organizational performance. Data was collected from 1200 Australian and New Zealand manufacturing organizations. Their finding showed that most of TQM practices are significantly related to performance, and soft TQM, Behavioral factors, such as customer focus, leadership, and people management were stronger related to performance than hard TQM factors. In another study, the same writers, Samson and Terziovski (2000) tested the effect of organizational size and its impact on the relationship between TQM and organizational performance. The results of this study confirm the positive and significant impact of TQM on most dimensions of organizational performance. In addition, they found that large organizations gain more benefits than smaller organizations.

In connection to this vein of research, Brah, Tee, and Rao (2002) carried out a study to investigate the relationship between TQM practices and organizational performance in 185 organizations in Singapore. The results supported this relationship and the study emphasized of some factors such as customer satisfaction, leadership, quality focus, and human resource focus. Similarly, Rahman and Bullock (2005) conducted a study in 261 manufacturing organization in Australia. The findings showed that there is a positive relationship between hard and soft factors of TQM, and soft TQM factors affect indirectly the organizational performance through the factors of hard TQM.

In their contribution to TQM research, Lemak, Reed, and Satish (1997) examined empirically the relationship between TQM and organizational performance based on 60 organizations. Their results showed that superior performance was associated with TQM practices. Another study conducted by Feng *et al.* (2006) which compared the organizational performance in Australian and Singapore organizations based on a questionnaire survey collected from 194 Australian and 58 Singaporean organizations. Their findings showed that people management and leadership are related to innovative performance while process management and customer focus are related to quality performance.

Similarly, Kumar, Choisine, Grosbois, and Kumar (2009) examined the relationship between TQM and performance in 15 Canadian organizations. The results confirmed the positive effect of TQM implementation on organizational performance.

In relation to that, Zakuan, Yusof, Laosirihongthong, and Shaharoun (2010) developed a conceptual model of TQM implementation that related to organizational performance in the automotive industry in Malaysia and Thailand. The results determined the significant differences in practices of TQM and their impact on organizational performance.

In studying the relationship between TQM, market competition, and organizational performance, Chong and Rundus (2004) examined the interactive effects of market competition and TQM on organizational performance. They used a data collected from 89 operation and production managers in Australia manufacturing organizations. A multiple regression technique was used to analyze the data. The findings showed that the more positive relationship between TQM practices and organizational performance as a result of the high degree of market competition.

The Research and Development (R&D) environments and its relation to TQM and performance have been studied empirically by Prajogo and Hong (2008). They used data from 130 R&D divisions of Korean manufacturing organizations. The Structural Equation Modeling technique was used to analyze the collected data. The results reported that TQM as generic principles can be adapted in an environment other than production and manufacturing areas.

In studying the relationship between TQM and technology management, and their impact on operations performance, Kuruppuarachchi and Perera (2010) examined this relationship of manufacturing organizations. They gathered data from 44 Sri Lankan manufacturing organizations with using Structural Equation Modeling (SEM) to analyze the data. The results of this research showed that TQM has a positive relation with operation performance, while there is significant in the relationship between technology management and operation performance. Moreover, the results showed that there is a strong relationship between TQM and technology management, which indicates that high TQM will be followed by technology management practices.

In their contribution to TQM literature, Agus and Hassan (2011) carried out an empirical study about enhancing production and customer performance through TQM strategies for competitive advantage. They examined this relationship in Malaysian manufacturing industry. Pearson's correlation and structural equation modeling were used to analyze the gathered data. The results reported that TQM has significant correlations with customer performance and production performance. In addition to that, this study pointed out that retail manufacturing firms should focus more on quality measurement of TQM and on

management support of TQM initiatives to gain strategic sustainable competitive advantages.

It is obvious from the previous literature review of quality management practices that the majority of research studies revealed that TQM strategy can impact positively the organizational performance (Tari, Claver-Cortes, & Lopez-Gamero, 2009). On the other side, many studies showed the failure of TQM to sustain the performance of the organization (Dooyoung et al., 1998). However, there are some researchers (Brah & Lim, 2005) argued that the failure of TQM-performance relationship for many reasons. First, the lack top management follow up and commitment towards services and products that affect quality performance relationship. Second, the lack of strategic focus that creates acceptance of TQM implementation to fix short-term problems. Finally, organizational culture affects positively or negatively the successful implementation of TQM.

#### **2.4.8.3 TQM and Performance of Service Organizations**

The roots of TQM have come from manufacturing industries, therefore its definition focus more on quality and product (Brah & Lim, 2006). Nowadays, both manufacturing and service industry practice TQM practices. Therefore, service organizations, both large and small, adopts TQM and as a result of that definition of TQM has been modified according to that (Brah & Lim, 2006). Where in manufacturing industry TQM is more focus on the process of manufacturing, the focus of service industry is more on human factor, such as, human resource management, after sale services, the condition of product delivery, and employee attitudes. Regardless of these differences, TQM principles in both industries share common characteristics. There are many studies that discuss the

relationship between TQM and organizational performance in service organizations. For example, Sum and Teo (1999) examined the management practices, strategies, and future plans of logistic companies in Singapore. In addition, Brah *et al.* (2000) concluded a significant positive correlation between TQM practices and operating and financial performance in the service industries in Singapore.

In relation to that, Hassan and Kerr (2003) examined empirically the effect of TQM practices on organizational performance in service organizations, based on data collected from 400 service firms. Their findings confirmed that customer support focus and top management support and commitment are the most important factors that affect organizational performance.

In their contribution to TQM literature in the supply chain management field, Kannan and Tan (2005) examined the extent to which quality management, supply chain management and just in time are correlated, and their impact of organizational performance. The data were collected from 556 questionnaire surveys. Their results showed that operational and strategic levels existed between TQM, just in time, and supply chain management. Moreover, understanding of supply chain management and commitment to quality management has great effect on performance.

In the same line, Samat, Ramayah and Saad (2006) investigated the relationship between TQM, service quality, and market orientation based on 175 service companies in northern of Malaysia. Findings showed that information and communications, continuous improvement, employee empowerment, and customer focus had an effect on quality

management. In addition to this result they found that employee empowerment and customer focus had a significant effect on market orientation.

On the other hand, Brah and Lim (2006) investigated the effects of TQM and technology on the organizational performance of logistic companies based on data collected from 325 logistic companies. Findings showed that TQM and technology complement each other and improving organizational performance. Furthermore, the analysis revealed that high technology and TQM organizations perform significantly better than low technology organizations.

Talib *et al.* (2013) investigated the relationship between TQM and quality performance in Indian service companies. Based on 172 questionnaires, they found that that 12 TQM practices partially affecting the performance of the company's quality. These practices are leadership, innovation and continuous improvement, human resource management, employee encouragement, communication, customer focus, supplier management, information and analysis, employee involvement, process management, strategic planning, and product and service design.

#### **2.4.9 Total Quality Management (TQM) in Public Organizations**

Total Quality Management (TQM) originated in the private sector with growing of literature that suggests its practices and principles to be adopted by many public sector organizations (Bennington & Cummane, 1997; Erridge *et al.*, 1998; Flood, 1993; Hammons & Maddux, 1990). Therefore, Hammons and Maddux (1990) pointed out that TQM is considered a solution for many complex problems in the public sector.

According to Dewhurst, Martinez-Lorente, and Dale (1999) public organizations are those organizations that do not have an interest in increasing profit as their objectives assumes that. Therefore, they classified public organizations to governmental and non-governmental organizations. They added that military and law enforcement in most countries belongs to non-governmental organizations whereas security services belong to governmental organizations. In addition, public organizations will be assumed to satisfy a social benefit in a limit budget, and little concern about competitive issues where their objective is to satisfy needs of the society rather than increase their number of customers (Dewhurst, Martinez-Lorente, & Dale, 1999).

The most empirical studies about TQM practices and implementation are in developed countries, whilst there is little attention about in developing countries in the public sector context (Sharma & Hoque, 2002). Therefore, this study will help to fill this gap in literature by studying TQM in one of the developing countries, namely United Arab Emirates (UAE), and especially in one of its public organizations, namely Dubai Police (DP).

In relation to that, Dewhurst *et al.* (1999) identified ten dimensions that can be applied and used in public organizations, they are:

- Top management support: it is one of the major important dimensions of successful TQM implementation where top management has to take commitment and accept maximum responsibility for the service and product offering. In addition, top management has to provide the necessary leadership in generating vision and mission to achieve the desired goals and objectives.

- Customer relationship: the needs of consumers and customers and their satisfaction should be taken into consideration and minds of all employees. In order to increase customers' demands and retain them, employees should keep good relation with them.
- Supplier relationships: organizations should keep in their minds those TQM principles regarding selecting suppliers to focus more on their quality more than price. In public organizations, suppliers should be examined regarding characteristics of the product which match and related to legal requirements.
- Workforce management: workforce in public organizations should be guided by the empowerment of workers and teams and training. By empowerment and teamwork, their behavior and perception will be changed positively.
- Employee attitudes and behavior: in order for organizations to implement TQM successfully, they should stimulate employees' attitudes, including pride in work and loyalty.
- Product and/or service design process: new product or services design should be evaluated before marketed, therefore, procedures and specifications should be clearly defined.
- Process flow management: TQM focuses on the need for housekeeping in the line of the 5S concept. Therefore, non-statistical and statistical improvement instruments should be appropriately applied. Processes need to be proofed from mistakes, and self inspection undertaken by clear work instructions.
- Quality data and reporting: quality information should be ready available for managers to take the proper decision making.

- The role of the quality department: quality department in organizations should access the top management and coordinate between workers in all departments. Its role is usually defined by the fact that quality should be achieved and fixed by law and regulations rather than by customers.
- Benchmarking: public organizations should benchmark with similar organizations with respect to best practices.

In relation to TQM and its implementation police departments, Murphey (1993) investigated the effect of TQM implementation in Florida's Municipal Police Agencies through using a survey method. He found a low level of TQM implementation within the state, however, other agencies that have already implemented TQM are high rated in the areas of professional expertise, interaction with public, internal stability, and officer and citizen empowerment.

The impact of ISO 9000 on TQM of the Malaysian public organizations was examined by Ahmed, Hamid, and Takahi (2008). They classified public sector in Kota Kinabalu Sabah into certified ISO9000 and non-certified in relation to TQM practices namely, leadership commitment, empowerment, teamwork, development and motivational strategies, and training. They found that there is no significant effect between ISO9000 registered and non-ISO9000 registered departments in all the practices of TQM implementation mentioned above.

#### **2.4.10 Total Quality Management (TQM) in the Middle East and Arab World**

A deeper review of the quality management literature showed that most of research studies were conducted in developed countries, and there is a lack of studies conducted in

developing countries (Rao *et al.*, 1997), particularly in Middle East countries (Dale *et al.*, 2001). According to Al-Khalifa and Aspinwell (2000) researchers did not pay attention to conduct empirical studies about quality management in developing countries, especially in Arab and Middle East nations. In their study of reviewing articles related to TQM implementation, Sila and Ebrahimpour (2002) mentioned that TQM implementation in the Middle East countries, namely, UAE, Saudi Arabia, and Qatar was only 1.7% of the reviewed studies, which means that there is a lack of knowledge in those countries regarding TQM practices.

In the last few years the awareness about quality management increased in the Middle East countries (Dedhia, 2001), but the pace of implementation and adoption of TQM was very slow (Al-Khalifa & Aspinwall, 2000; Chapman & Al-Khawaldeh, 2002). The first international conference towards quality management was in Bahrain in 1990 (Dedhia, 2001). There are some few studies in Middle East such as Al-Suleimani and Sharad (1994), Zairi (1996), and Aly (1996) that addressed the problems and challenges for organizations in the Middle Eastern countries but they are in a limited number of empirical studies.

In their contribution to that, Al-Khalifa and Aspinwall (2000) carried out a study about TQM implementation in Qatari firms. Their results showed that TQM implementation in Qatar encounter many obstacles such as top management commitment, the lack of information, and the lack of education and training of quality.

In another perspective, Chapman and Al-Khawaleh (2002) examined the relationship between TQM implementation and productivity of labor in Jordanian manufacturing

organizations. Their findings showed that high TQM implementation can result a high labor productivity compared to low TQM implementation.

In the same line of research, Salaheldin (2003) investigated the challenging and supporting factors of implementing TQM. His data were collected from 84 Egyptian manufacturing organizations. The result revealed that Egyptian organizations are facing the same problems like in other developing countries when implementing TQM. Some of these challenges are the lack of training, top management commitment support, resistance to change, and resources. Additionally, Salaheldin (2009) identified some critical factors of TQM implementation and their impact on organizational and operational performance through 139 questionnaire surevy. He found that there is a substantial positive impact of TQM on organizational and operational performance of SMEs in Qatar.

Furthermore, Al-Zamany, Hoddlee, and Savage (2002) investigated the level of understaning the quality managemenet in Yemen through case studies. They found that governmental support, changes in organizational culture, and technical understanding of TQM werer the problems facing the implementation of TQM in Yemen. In Saudi Arabis, Curry and Kadasah (2002) investigated the key elements of TQM in firms where they found that learning the quality management concepts is the most important factor for TQM implementation.

In relation to that, Ovretveit and Al Serouri (2006) conducted a case study about the hospital quality management system in low income Arabic countries. Their results indicated the increasing compliance with a few selected standards and produced modest improvements in patient utilization and satisfaction.

The mediation effect of innovation and employee performance between TQM and organizational performance was examined empirically by Sadikoglu and Zehir (2010) in Turkish firms. Their results supported the proposed hypotheses. In other words, employee performance and innovation performance were partially mediated the relationship between TQM and firm performance.

The impact of organizational culture on TQM implementation was investigated by Rad (2006) in Asfahan University Hospital in Iran. They used a survey questionnaire to collect the primary data from hospital managers and employees. They found that TQM implementation is medium.

Lakhal, Pasin, and Limam (2006) examined the impact of TQM practices on performance of plastic transforming sector in Tunisia. Their results based on 133 questionnaires from Tunisian companies where they found that there is a positive relationship between TQM practices and organizational performance.

In Turkish manufacturing organizations, Bayazit (2003) investigated the importance of TQM practices based on 100 survey questionnaire obtained from large companies. He found that there is a growing number of Turkish organizations that are willing to implement TQM practices to achieve competitive advantages. In addition, he found important factors for successful implementation of TQM such as top management support, employee commitment and involvement, quality training and education, customer focus, use of statistical techniques, and teamwork.

In Palestinian context, Baidoun (2004) examined the effect of TQM implementation on organizational performance in the Palestinian industrial context based on data collected through a questionnaire and semi-structured interviews from Palestinian organizations. The results revealed 19 quality factors that are essential for successful TQM implementation.

However there are some studies that investigated the effect of TQM implementation on organizational performance in the Middle east, but they are rare and most of them case studies or conceptual papers, unlike in the developed countries like USA, Japan, and Europe there are many empirical studies regarding TQM strategy and implementation (Djerdjour & Patel, 2000).

#### **2.4.11 Total Quality Management and Culture**

In today's changing business environment, TQM is considered the driving force behind the changes inside organizations (Irani, Beskese, & Love, 2004). According to them that many research agreed that TQM is somehow has a direct link to organizational culture. In addition, appropriate culture is needed to support the scope of TQM. Therefore, organizational culture has been acknowledged to be the most important component of organizational success (Corbett & Rastrick, 2000; Gore, 1999). Moreover, organizational culture is regarded as a set of collective norms that regulate the person's behavior within the organization (Irani *et al.*, 2004).

As a new concept in management, TQM implementation faces challenges and obstacles from employees who resist accepting the new change in the management process. This is

due to human nature where employees think that this the new change will affect their performance and afraid of the invisible future. There are many studies that investigated the TQM-culture relationship (Jabnoun, 2001; Sousa-Poza, Nystrom, & Wiebe, 2001).

The effect of organizational culture on TQM implementation success will be discussed in the next parts to examine its effect on the relationship between TQM and organizational performance.

#### **2.4.12 Limitation in the above studies**

It is clear from the above literature that most studies have been done in developed countries and little in the Arab World. Therefore, there is a lack of knowledge regarding the implementation process of TQM. In addition, most of the studies in the Arab countries regarding TQM practices are descriptive and conceptual papers, and very few empirical studies have been made regarding the influence of TQM practices and implementation on organizational performance.

It is great to mention that culture play a very crucial role when implementing new system or practice, therefore this study will examine the cultural impact on TQM and its implication on performance. Moreover, Arab World has different social and cultural environment, so this study will contribute to knowledge by examining TQM effects in another area of the world away from developed countries.

Furthermore, the lack of empirical studies of TQM practices is also in public sector where most of studies are in private sector such as manufacturing, service, and SMEs organizations. Moreover, the lack of empirical studies is increasing more in police

departments because of regulations, secrecy, and lack of transparency. Therefore this empirical study will examine the TQM practices implication in one of the police departments in the Arab World, namely the Dubai Police.

To highlight more in the past literature that related to the enterprise resource planning variable, the following sections were developed.

## **2.5 Enterprise Resource Planning (ERP)**

The organizational landscape has been changed due to technological innovations. Therefore, for organizations to remain competitive and well-known within the corporate climates that demand effectiveness and efficiency organizations have to identify goals and strategies that reduce cost, shorten time for process framework, and improve quality. In the last two decades, Enterprise resource planning (ERP) is considered as one of the major organizational changes that maximize organizational efficiency and productivity. Elbanna (2006) mentioned that ERP systems attract many attentions in the last few years. The reasons behind the investment in ERP systems include reducing costs, establishing competitive advantage, increasing profit, and competing in a global market. The following sections review of the literature that examines the impact of ERP systems on organizations' effectiveness, efficiency, productivity, and performance.

### **2.5.1 An Overview of Enterprise Resource Planning (ERP)**

Organizations use a wide variety of technological systems and techniques to improve their services and products and to enhance business process. The global market competition and the progress of information technology (IT) enforce many organizations

to implement an advanced technological system to stay in the line of competition (Wei, 2007). One of these technological systems is Enterprise Resource Planning (ERP). An ERP has gained significant growth in the market in the last two decades (Bonasera, 2000; Reilly, 2005). According to D'Aquila, Shepherd, and Friscia (2009) the global market's revenue of ERP were estimated in 2008 to be \$65 billion, in 2009 to be \$61 billion, and \$65 billion in 2010. Moller (2005) pointed out that the original fundamental structure of ERP was in the 1950s and 1960s when computers turned to business. The first application automated manual task such as invoicing, recording, and bookkeeping. Moreover, he stated that ERP is a standardized software package that consists of several modules for specific functions. The development of ERP began with MRP that is used as a universal manufacturing integrated system (Wallace & Kremzer, 2001). Therefore, ERP and MRP share the same essential process with the difference that ERP is much broader than MRP and also more effective in dealing with multiple units within the organization.

Kumar, Maheshwari, and Kumar (2002) stated that an ERP system is a complex system that based on the integration of business processes to automate the flow of information, material, and financial resources within the organization by using a common database. In addition to that, Motwani *et al.* (2002) pointed out that ERP implementation involves emerging appropriate change in business process and IT changes in order to significantly enhance quality, flexibility, responsiveness, cost, and performance.

When comparing ERP systems to the legacy or other systems, the most significant features of ERP are related to databases, information coordination, interfaces, application, and architecture process. These all features result output which can be measured in

different sides, such as effective factors, technical factors, and experiences of users factors (Wei, 2008). Moreover, users' satisfaction and usage are very critical and significant issues where system performance is evaluated by using experience of different users such as top managers, middle managers, employees, and system engineers.

According to Huang and Palvia (2001), the implementation of ERP is affected by two board categories factors: organizational/internal and national/environmental, every one of them contains five variables as follows:

- Economy and economic growth: growth of economy will sound on other sides of development and competitive advantages which require more investment in IT systems like ERP.
- Infrastructure: it includes both basic and IT infrastructure. The entire infrastructure facilitate complete management of value chain that enabled by ERP.
- IT maturity: acquiring and deploying of systems influenced by the level of maturity in organization. Mature organizations help for better understanding and implementation of ERP systems.
- Computer culture: it refers to the history of organization in dealing with computers and attitudes of employees towards computers. The more and strong computer culture will result better understanding of the new system's functions, data management, and accepting for the new system, i.e. ERP.
- Business size: size of the organization will determine the extent of IT investment and usage. ERP is regarded as a big IT system, therefore, when a large company acquire and implement it will success better than other small organizations.

- BPR experience: implementation of ERP includes the whole organization, therefore there is a need for business process reengineering (BPR) to implement and suit ERP for the organization's needs.
- Manufacturing strengths: ERP has greater functionality in manufacturing industry. Therefore, organizations with manufacturing strengths are more to implement ERP successfully.
- Government regulations: government can increase or reduces of IT diffusion by its restricted rules and regulations.
- Management commitment: management commitment is a key factor of implementing ERP.
- Regional environment: implementing and using of ERP systems is affected by country's regional environment and culture.

In addition to that, Huang and Palvia (2001) identified a range of ERP implementation issues in developed and developing countries. They pointed out that ERP systems have been widely implemented and used in developed countries such as USA, Canada, UK, Germany, France, and Japan. Moreover, they pointed out that developed countries has different characteristics of implementing ERP such as excellent infrastructures, strong economic base and growth, government IT policy, and new technologies like ERP, SCM and others. On the other hand, ERP also implemented in developing countries such as Asia/ Pacific like China and India, and Latin American like Brazil. These countries have characteristics which impact significantly ERP implementation such as national/environmental factors, growth of the economy, infrastructure, and government regulations.

Since its foundation in the late of 1980s and early 1990s, business process reengineering (BPR) was considered as a miracle solution for organizational performance achievement (Huizing, Koster, & Bouman, 1997). There is still an agreement in literature that BPR is leading to increase in number of areas such as organizational quality, customer satisfaction, market coverage, productivity, defect reduction, and cost reductions (Davenport & Short, 1990). However, BPR has benefits; there is a high failure rate which was not explained. According to Raymond, Bergeron, and Rivard (1998) that while investigating BPR process, we have to look at four independent factors; organizational support, compliance with BPR principles, methodological rigor of the project, and diversity of the human resources allocated to the process.

In relation of ERP to leadership, Walker (2004) pointed out that the literature disclosed that ERP project leaders concentrate on developing adaptive leadership strategies combining processes that integrate with innovative progress. Therefore, Forst (2004) considered this strategy makes ERP leadership as the most effective way to meet organizational objectives post-integration and grant managers the competitive edge.

In the last several years, organizations have been implementing and using ERP software packages from different vendors such as SAP, Oracle, and PeopleSoft to enhance performance by improving internal and external processes (Summer, 2005). In addition, Summer (2005) stated that ERP vendors introduce standard software packages with limit of ERP's functionality. Therefore, if organizations decide to change this standardization to meet their existing processes and requirements, they face either delay of implementation or scalability problems. So this is the reason that makes organizations to select partial implementation of ERP like inventory, procurement, and accounting.

In another perspective, there are many constraints in the stage of implementation of ERP system such as technology, cost, time, and complexity. In contribution to that, Fleisch, Oesterle, and Powell (2004) pointed out that the completion of the project usually takes a long time and is linked to unpredictable cost. In another point of view, Brown *et al.* (2009) argued that ERP implementation process is challenging, complex, and encompasses high cost.

In relation to that, Davenport (2002) argued that however the growth of enterprise software package of \$10 billion every year, but still there is a huge gap between what has been achieved and what it was promised by vendors in terms of delivery of services of the software package. Furthermore, he blamed ERP challenges because of few factors such as, installation investment, the complexity of technical challenges, and incapability fit with legacy systems. In addition, Davenport (2002) added that the lack of centralization, data fragmentation, the process of data into a single database, and the complexity are few obstacles that the enterprise software package is unable to resolve.

In his earlier study, Davenport (1998) stated that ERP systems are various from other general software in terms of their integration features and uniqueness that report many implementation failures which may lead to organizational bankruptcy.

Regarding ERP architecture, Motiwalla and Thompson (2009) pointed out that application of ERP is implemented in dispersed mode, and servers are centralized and clients spread across different locations of the organization. According to Sandoe, Corbitt, & Boykin (2001) there are three key issues in developing the organization, they are: database management, working with a diverse range of software and hardware

platform, and establishing standard protocols for communication data. They added, to understand the organization system architecture, it is important to explore two dimensions of physical and logical architecture.

The package of ERP application is a longanimity that comes true when information flow through the integration of organization sections such as accounting, human resources, customer relations, and supply chain (Davenport, 2002).

### **2.5.2 Definition of Enterprise Resource Planning (ERP)**

Despite of the extensive work in the literature of the ERP system, there is still a lack of agreement among researchers on the definition of ERP. Moreover, ERP was differently defined due to the approach and role that ERP plays in organizations.

However, in the literature of ERP systems, there are several definitions that define ERP. As an example, Tarn, Yen, and Beaumont (2002) defined ERP systems as enterprise-wide application packages that are integrated to support different business functions like inventory management, manufacturing, human resource management, and financial and accounting. Similarly, Scalle and Cotteleer (1994) defined ERP as an information system that integrates all business aspect such as purchasing, sales distribution, customer service, production planning, manufacturing, and finance. In addition, Martin, Brown, DeHayes, Hoffer, and Perkins (1999) defined ERP software system as a set of integrated business modules, or applications, perform most business functions, including material requirements planning, inventory control, account potable, general ledger accounting, accounts receivable, human resources, and order management.

Moreover, Davenport (2002) defined ERP as an advanced technological solution system that integrate critical information within organization such as supply chain, finance and accounting, human resource, and customer relationships. In contrast to that, Wallace and Kremzar (2001) argued that ERP is not a software installation; therefore they recommend enterprise system or enterprise software can be used.

In relation to business process, Lee and Lee (2000) defined ERP as the basis for best management processes and best practices, that producing different methods that recognize the most advanced and successful business in the world in a given industry.

In relation to that, Fang and Lin (2006) defined ERP systems as a commercial software that are standard and customizable application that integrates business solution for the main functions and all processes in the organization.

Furthermore, Huang and Palvia (2001) defined ERP as an industry term that contains a set of activities supported by many software module applications that help service business or manufacturer to manage the business important parts. In other words, it encompasses good practices in the entities management in develop economies (Caglio, 2003). According to Chapman (2005), ERPs are considered managerial instruments that connect the organizational process of controlling and accounting. Thus, ERP systems combine the business processes and information technology for the sake of easing the follow of information through functions of business (Dumitru, Albu, Albu, & Dumitru, 2013). Davenport (1998) considered ERP is not only a software package, but a way of doing business. It is clear from the above definition that ERP is not only a system that integrates different modules but a management and managerial instrument that complemnt other initiatives like TQM.

### **2.5.3 Benefits of Enterprise Resource Planning (ERP)**

ERP systems bring several advantages to the organization; however only after implementation the expected benefits can be achieved (Hsu & Chen, 2004). Mabert, Soni, and Venkartaramanan (2003) recognized many tangible benefits of ERP such as improve on-time delivery, improve order cycle, lower inventory level, decrease financial close cycle, improve interaction with customers, and reduce direct operating costs.

Most of implementation and integration endeavor in both public and private sectors are trying to gain some benefits and sustain competitive advantage, reduce costs, and improve technology investment (Mische, 2002). In contrast to legacy systems that they are very limited and weak in terms of maintenance cost, technological changes, flexibility, and in transforming components to another framework, where ERP can get over these limitations (Gupta & Bhatia, 2005).

In the line of this view, Sandoe *et al.* (2001) argued that there are fundamentally two major motivations toward ERP systems; operational and technical. Benefits of technical aspect are lying in creating a more flexible environment, supporting growth and expansion, improving overall effectiveness, improving quality information, and acquiring of non-integrated systems. On the other hand, benefits of operational aspect where organizations are concerned more about internal processes because of poor performance, complex processes, inefficient processes, inability to respond to customers, inconsistent business processes, and inability to support their own goals and strategies.

In relation to that, Roberto (2007) denoted that an ERP improves security management, improves integration between applications, adopts software as a service, expand the application of open source, and adopts architecture of service-oriented. Similarly, Motiwalla and Thompson (2009) stated that ERP systems are comprehensive, designed to connect organizations with their partners and suppliers, and integrated application supports organizational functions. Moreover, Gurevish (2004) mentioned that the primary benefit from ERP system is that the data is dynamic and updated constantly. In addition, Davenport (2000) suggested that ERP systems have many benefits for the organization such as generating fast financial information, assistance in the development of new strategies, reduction of cycle time, preceding the E-business, and promoting the efficiency flowing of information.

In relation to the benefit of ERP system in manufacturing operations, Macvitte (2001) argued that ERP systems have the capability of handling functions of customers' orders processing with high improved efficiency, better than using manual paper form or several software programs to enter every single order. Therefore, ERP systems are automating processes and eliminate using multiple systems and hand writing.

Past literature realized the benefit of ERP systems. Organizations can benefit from ERP more flexibility, increased efficiency (Radding, 1999), reduced cycle time, higher profit margin, and better collaboration (Stein, 1998), lower operating costs, improved communication, and increased revenue (Oliver, 1999).

In their attempt to investigate the relationship between ERP benefits and the organization performance of supply chain management, Yang and Su (2009) investigated three ERP

benefits, they are: operational benefits (benefits arising from cross functional processes automation), tactical benefits (they are managerial benefits arising from using data for better plan and manage production, inventory and physical resources, manpower, and control of financial performance of customers, geographic area, products, and business lines), and strategic benefits (benefits arising from the system ability to enhance and support business growth, and organizational benefits derived from empowering of employees, higher employees satisfaction and morale, and facilitation business).

In connection to that, Hsu and Chen (2004) classified ERP benefits into tangible and intangible benefits mentioned in the following table:

<b>Tangible benefits</b>	<b>Intangible benefits</b>
Support production capacity planning	Allocate enterprise resource better
Provide more accurate market demand forecast	Increase communications among departments
Facilitate mass customization and improve manufacturing flexibility	Integrate information across the enterprise
Increase inventory turnover rate	Increase the availability of critical operational and decision support information to provide visibility of enterprise planning activities
Decrease inventory level and cost	Access to real-time business intelligence
Control and improve product quality	Improve information flow among departments
Speed up new product development cycle and time-to-market	Increase response time to customer order and inquiries
Reduce the cycle time of order fulfillment	Improve service quality
Achieve operational excellence	Improve customer satisfaction and loyalty
	Growing purchase from customers

Figure 2.3  
*Tangible and intangible benefits of ERP*  
 Source: Hsu and Chen (2004)

#### **2.5.4 Critical Success Factors of Enterprise Resource Planning (ERP)**

Critical success factors of ERP implementation have been investigated by many researchers (Bingi, Sharma, & Jayanth, 1999; Huang *et al.*, 2004; Murray & Coffin, 2001). For example, Yang, Ting, and Wei (2006) in their empirical study of middle-size

companies in Taiwan, identified six dimensions to measure ERP implementation performance from the perspective of system users, they are: system functions, information quality, use attitude, users' satisfaction, system quality, and system efficiency. Their result showed that education and training, implementing consultant services, specific staff for implementation of ERP, personnel, customized processes, and users' characteristics will significantly affect the performance of ERP system.

In the same line of research, Shad, Chen, and Azeem (2011) investigated the performance of ERP in public sector in Pakistan. They identified five most critical factors that can lead an organization towards failure or success. These five factors are: architecture choices, business process re-engineering, effective usage of process database, technical selection of quality consultant, and education on new business processes. Their results from statistical analysis proved these five critical technical factors if addressed with other managerial factors can enhance ERP project performance.

In relation to that, Al-Mashari, Al-Mudimigh, and Zairi (2003) identified some critical factors that can influence ERP implementation, they are: ERP package selection, process management, project management, system integration, cultural and structural change, communication, training and education, legacy system management, and system testing. Similarly, Motwani, Subramanian, and Gopalakrishna (2005) mentioned seven critical factors, they are: cultural readiness, relationship balancing, IT knowledge and leveragability, change management, strategic initiatives, learning capacity, and process management.

In connection to the same field, Somers and Nelson (2004) identified the following critical success factors: user education and training, selection of appropriate package, customization, business process reengineering (BPR), dedicating resources, clear goals and objectives, interdepartmental communication, management of expectations, project management, data analysis and conversion, defining the architecture, change management, education on new processes, and interdepartmental cooperation.

In addition to that, Umble, Haft, and Umble (2003) distinguished nine critical factors, excellent project management, clear understanding of strategic goals, excellent implementation team, education and training, multi-site issues, commitment from top management, change management, data accuracy, and focused performance measures.

### **2.5.5 Enterprise Resource Planning (ERP) in Supply Chain Management (SCM)**

Organizations in supply chain management emphasize on how a chain or a group of firms carry out to create value for the ultimate customer (Brower & Speh, 2001). Therefore, performance of supply chain companies is the main and critical purpose to be achieved. In addition, supply chain processes widely spread in different geographical locations. The integration between these places needs a very powerful system which can fulfill requirements of companies and their customers. ERP systems are the most sophisticated software program that can integrate and connect every part of the company in effective and efficient way. ERP system ability to support supply chain performance measurement appear to be affected their life cycle in different phases, when the system is selected, implemented, and used (Forsslund & Jonsson, 2010). Moreover, ERP is regarded to be the backbone of supply chain management (Sheu, Yen, & Krumwiede, 2003; Stadler, 2008).

According to Sus and Yang (2010) there are many academic research and many empirical studies argued that companies with strong supply chain management competencies can result high performance, therefore ERP expected to support and enhance these competencies in supply chain management.

The benefits of implementing ERP in supply chain management were examined by some writers. For example, Su and Yang (2010), in their empirical study of using structural equation model for analyzing the impact of ERP on supply chain management, demonstrated that there is close interrelations among benefits of implementing ERP and firm performance and competences in supply chain management. In addition, Shang and Seddon (2000) pointed out that benefits of ERP can be classified into five groups, they are: organizational benefits, IT infrastructure benefits, strategic benefits, managerial benefits, and operational benefits. Moreover, when the ERP system integrated with supply chain, the organizations should achieve logistic performance advantages (Knolmayer, Mertens, Zeier, & Dickersbach, 2009).

In contrast to the previous researches, there are some problems when implementing ERP in the supply chain environment. For example, Kelle and Akbulut (2005) argued that ERP systems failed to lead buyer-supplier coordination because of poor or conflicting measurement. In addition to that, Botta-Genoulza *et al.* (2005) pointed out that ERP systems can be affected by the systems themselves or by the method they are implemented. Furthermore, Forslund and Jonsson (2007) stated that many studies revealed obstacles in supply chain performance measurement where ERP is one of these

obstacles (Bourne, Mills, Wilcox, Neely, & Platts, 2000; Brewer & Speh, 2001; Phusavat, Anussornnitisarn, Helo, & Dwight, 2009).

### **2.5.6 The Relationship between Enterprise Resource Planning (ERP) and Organizational Performance**

In the literature of ERP, there has been a plenty of research work conducted the relationship between ERP systems and organizational performance. The performance literature research area differentiates between organizational performance, financial performance, societal performance, competitive performance, and overall performance (Florescu, Ionescu, & Tudor, 2010). Impacts of ERP systems on organizational performance and how they compete with competitors attract many writers in the last few years. The main purpose of implementing ERP systems is to improve organizational effectiveness and efficiency (non -financial performance) and ultimately financial performance (Kallunki, Laitinen, & Silvola, 2011). Therefore, ERPs can be predictable to have a direct impact on non-financial performance of an organization. On the other hand, they also improve the financial performance of the organization due to the lower IT infrastructure cost (Kallunki *et al.*, 2011). In addition, ERP systems can drive an organization towards creating generic processes where customized processes might be the source of competitive advantage (Davenport, 1998).

The studies that examined the relationship between ERPs and non-financial performance are few and their base on processual or casual analysis models for evaluating the benefits of the systems, like reliability, flexibility, and responsiveness (Said, HassabElnaby, & Wier, 2003; Wieder *et al.*, 2006).

Past studies on the ERP - performance relationship showed conflicting results in this relationship (Kang, Park, & Yang, 2008). Several of them got that investment in ERP systems improved the overall organizational performance (Bendoly & Kaefer, 2004), while others writers found that ERP systems only promote performance in specific areas and places (Evan & Bragg, 1997; Laughlin, 1999). Many other studies indicated that ERP systems may impact negatively organizational performance due to some critical reasons such as, culture, education, training, and top management commitment and support. For more clarification regarding the effect of ERP systems on organizational performance, the next few lines will mentioned some of these studies from different angles.

For example, Hayes, Hunton, and Reck (2001) argued that investors in the capital market react positively when there is an announcement that organizations implementing ERP.

Furthermore, Poston and Grabski (2001) examined the impact of ERP on organization performance over a 3 year period. They found a significant decrease in the ratio of cost of goods sold for revenue and a reduction in the ratio of employees to revenue, while no significant difference in the ratio of selling, residual income, or general expenses to revenue.

In the same stream of research, Hunton, Lippincott, and Rech (2003) examining the effect of ERP on organizational performance of adopters and nonadopters. Their finding showed that there is a significant difference where financial performance of nonadopters decreased over time while steady for adopters' organizations. In addition, they found that there is a positive relationship between financial health and performance for large organizations and a negative relationship for small one.

In relation to that, Peffers and Dos Santos (1996) found a positive relationship between organizational performance and innovative IT. Similarly, Florescu, Ionescu, and Tudor (2010) investigated the IT contribution to performance improvement of organizations. Their findings showed that ERP systems help organizations to improve their performance only if they combine it with other sources such as the team's structure, human resources and capacity, and monitoring of performance.

The impacts of charismatic leadership on team and overall organizational performance during implementation of ERP examined by Wang, Chou, and Jiang (2005) based on 106 questionnaires from top 500 largest corporations in Taiwan. The results confirm that leaders should show more charismatic behavior to set up a cohesive ERP project team and thus improve organizational performance.

In their attempt to measure the performance of ERP system from the balanced scorecard perspective, Fang and Lin (2006) examined the relationship between ERP systems and organizational performance based on data collected from Taiwanese companies that implement ERP before 2005. The return sample size was 85 questionnaires and the results showed the balanced scorecard measures indicate significantly influenced organizational performance.

Implementation of ERP systems and its relation to organizational and operational performance has been investigated by many researchers. For example, Madapusi and D'Souza (2012) examined the relationship between ERP system implementation and operational performance based on data collected from 203 Indian production organizations, by using multiple linear regressions for analysis. Their results suggested

more understanding of the contribution of ERP to operational performance that can be gained if managers and researchers examine changes in the system and modular levels.

Similarly, Nicolaou and Bhattacharya (2006) examined empirically the extent separated changes to ERP over post implementation time can impact the organization's ability to improve financial performance in long-run. Their findings suggested that following changes of ERP usually help to resolve the implementation issues in the using stage. In addition, their findings indicate that organizations that adopting an ERP system with upgrade may gain superior differential financial performance when comparing with other not applying such enhancement.

In addition to that, Kale, Banwait, and Laroia (2010) investigated in exploratory research the benefit of ERP implementation in Indian small and medium sized organizations (SMEs) based on 130 SMEs enterprises. Their results showed that most companies have implemented ERP are beneficial in improving customer services, reducing inventory, and improving communications. In addition to their contribution, they found that top management support, participation, and users' involvement are the major contribution success of ERP.

In relation to users' perceived absorptive capacity when using ERP and its relation to organizational performance, Park, Suh, and Yang (2007) examined this effect in a Korean context based on data collected from 245 users in 20 Korean firms that already implemented ERP for at least one year before collecting data. Their findings pointed out that the user capacity to assimilate and use the knowledge of ERP has direct and indirect impact on its value. Moreover, it was found that the users' ability to comprehend the

knowledge and benefit from the ERP system influence the ERP performance by applying and assimilating the knowledge.

In line with this view, Velcu (2007) examined the economic benefits by investigating the changes of business process in organizations that have several motivations for ERP implementation. Data was collected by 14 semi-structured interviews in mid-sized Finnish firms. The results proved that there are interrelationships between motivation for implementing ERP and benefits of ERP internal efficiency benefits, customer benefits, and financial benefits.

Based on empirical study, Kallunki, Laitinen, and Silvola (2011) investigated the role of formal and informal management control systems as a mediator between ERP system and organizational performance. Their data were based on 70 Finnish organizations. Findings revealed that the formal management control acts as a mediating variable that affect positively the relation between ERP and non-financial performance. In addition, the informal management control system did not show the same mediating effect. Moreover, their finding declared that the use of ERP results organizational performance in the long run.

For a different perspective, Wier, Hunton, and HassabElnaby (2007) examined whether the joint adoption of non-financial performance indicators (NFPI) and ERP system significantly enhance organizational performance, as compared to strategy if implemented alone. Their findings indicated that organizations with both ERP and NFPI gain significantly higher long and short run return on assets and stock returns than either NFPI-only or ERP-only organizations.

Based on a process-based approach, Uwizeyemungu and Raymond (2010) evaluated the contribution of ERP systems to organizational performance. Their finding pointed out that post evaluation of ERP system is important not only to justify that the system was right choice investment, but also to get more organizational benefits from the system.

Kang, Park, and Yang (2008) examined some conditions where ERP systems have a positive impact on business performance. Their empirical study was on Korean companies that implement ERP systems. Findings showed that the alignment between ERP and integration modes is set by ERP objectives and positive results. In addition, operational efficiency is correlated with alignment degree between ERP system and the integration modes. Similarly, Wei (2008) proposed a comprehensive framework for examining the organizational performance of ERP system based on the knowledge of objectives of implementing ERP. His evaluation of the proposed framework results some advantages such as, ensures that performance indicators are used to assess the ERP system performance are aligned with ERP implementation objectives, project teams can easily identify performance indicators, allow members to control ERP performance and identify improvement if needed, and perform measurement of ERP performance with an ERP system.

Palaniswamy and Frank (2002) investigated the impact of ERP systems on performance in manufacturing sector based on five case studies. Results showed that implementing of ERP system create benefit for organizations and enhance performance. In addition to that, Bendoly and Jacobs (2004) investigated the process requirement to implement ERP system and its impact on operational performance based on data collected from 453

companies. Their results suggested that the alignment of operational needs and the ERP solution is crucial to satisfy with ERP system and to deliver orders on time. Furthermore, HassabElnaby, Hwang, and Vonderembse (2012) found a positive effect when a company employs a prospector business strategy. This prospector business strategy can enhance the company's ability to accomplish organizational capabilities and achieve a high level of financial performance.

In their contribution to the same vein of research, Shatat and Zulkifli (2012), in their study of Malaysian manufacturing companies, found a significant and positive relationship between ERP system and supply chain management.

While most of the previous studies have shown the positive relationship between ERP system and organizational performance, there are other studies that found non-significant results (Hitt & Brynjolfsson, 1996; Mohmood & Mann, 1993; Weill, 1992).

For example, Hunton *et al.* (2003) examined the effect of ERP adoption and overall performance by comparing return on investment, return on assets, and asset turnover of adopters and non adopters of ERP system. Their results did not show improvement of performance for ERP adopters.

In relation with that, Wieder *et al.* (2006) investigated the effect of ERP systems on organizations and business process performance based on a data collected by survey of 2170 Australian firms. Their findings showed no significant performance differences between ERP adopters and non adopters.

From the above studies regarding the relationship between ERP implementation and organizational performance, we can clearly notice that there is a contradiction in the results. In addition, Most of failure of ERP implementation, according to some studies' finding, in financial performance aspect, as example, Shad, Chen, and Azeem (2011) considered ERP as the most important and critical area especially in public sector organizations where operational efficiency and cost effectiveness is more prioritized on profits. Therefore, this study will examine the ERP-performance relationship in public organization that its core business not for profit or financial performance.

### **2.5.7 The Relationship between Enterprise Resource Planning (ERP) and Total Quality Management (TQM)**

The implementations such as ERP and Total Quality management initiatives like Six Sigma are considered in the top list of initiatives that enable organizations to gain competitive advantages (Abdinnour & Groen, 2009). Both systems are expensive and time consuming, not only due to the needed reengineering processes but for the need also to change management. Laframboise (2002) argued that quality management programs and ERP implementations are strategic business initiatives that aim to improve organizational performance. Therefore, ERP and TQM initiatives have a broad scope that affecting all the processes of the organization (Bhatt, 2000; Manetti, 2001). Abdinnour and Groen (2009) argued that they found only one study (Laframboise & Reyes, 2005) to date that discussed the effect of integration ERP with TQM. They used qualitative analysis, interview method, in the aerospace industry. Moreover, Ghadilolae, Aghajani, and Rahmati (2010) concluded in their study that ERP implementation can be useful for organizations if it is preceded by TQM implementation because TQM brings problem

solving and continuous improvement that will help in the implementation of ERP systems.

ERP and TQM have similar success factors such as top management support, business process reengineering, open communication, culture, and stakeholder involvement (Alexis, 2000). Jha and Joshi (2007) pointed out that quality management and ERP initiatives have developed separately from each other and considered as a resource for organizations to gain competitive advantage. They added, ERP and TQM are practices that have enormous impact on business, and organizations without TQM culture will result a lower chance for ERP to succeed. In relation to that, Asil *et al.* (2013) found that TQM is a pre-requisite practice before implementing ERP system. Therefore, it is very important to look at TQM integrate with ERP in organizations and must be a part of organizations' strategy to achieve competitive advantage in long-run (Jha & Joshi, 2007).

In connection with that, Marc and Gyu (2003) argued that not all organizations have been implementing ERP successfully due to some critical factors such as total quality management (TQM), business process reengineering (BPR), and culture.

Critical success factors are identical in ERP implementation and TQM practices, Jha and Joshi (2007) indicated some of them such as: top management commitment and leadership, effective teamwork, effective communication and dissemination, education and training, stakeholder involvement and empowerment, identification of resources and structure, measurement and statistical analysis, and change management. In addition, ERP systems play a crucial role in coordination of function of quality, while TQM solves

problems of techniques and brings continuous improvement opportunities that simplify implementation of ERP.

Brah and Lim (2006) found in their study that TQM and technology complement each other and play very important role in improving performance. Moreover, their analysis showed that both high TQM organizations and high technology organizations perform better than low technology organizations.

To highlight more in the past literature that related to the entrepreneurial orientation variable, the following sections were developed.

## **2.6 Entrepreneurial Orientation (EO)**

### **2.6.1 Introduction to Entrepreneurship**

Entrepreneurial activities have been increased as important to organizations, but in today's universal economy, entrepreneurship has become more important to obtain successfulness and achieve an organizational performance and a sustainable competitive advantage (Covin & Slevin, 1986; Wiklund & Shepherd, 2003; Zahra, 1986). In another point of view, Davis (2007) argued that entrepreneurship field has been considered among the fastest growing fields in literature of management in the last few decades. Entrepreneurship research started in USA where until 2000 most of studies were done in this country, then later on some studies has been performed in other countries such as Sweden (Wiklund & Shepherd, 2003, 2005), Greece (Dimitratos, Lioukas, & Carter, 2004), China (Chen, Zhu, & Anquan, 2005), Germany (Walter *et al.*, 2006), Finland (Jantunen *et al.*, 2005), South Africa (Goosen, de Coning, & Smit, 2002), Slovenia

(Antoncic & Hisrich, 2001, 2004; Antoncic, 2006), United Kingdom (Hughes & Morgen, 2007), Netherlands (Kemelgor, 2002; Stam & Elfring, 2008), Vietnam and Thailand (Swierczek & Ha, 2003), and Turkey (Kaya, 2006).

In its relation to performance, entrepreneurship writers in both the scholarly literature and the popular press honored the importance role of entrepreneurial activities and positively assumed the relationship between entrepreneurship and performance (Lumpkin & Dess, 2001). In their previous contribution to the same field, Lumpkin and Dess (1996) observed a distinction between entrepreneurship and entrepreneurial orientation by proposing that entrepreneurship refers to the entrepreneurial decisions *content* by answering *what* is undertaken, whereas entrepreneurial orientation process answer the question *how* ventures are undertaken.

Furthermore, there is a well standard to classify the entrepreneurship definitions prepared by Kaufmann and Dant (1998) that is based on entrepreneurs' behavior, qualities, and roles. In demanding a definition for entrepreneurship concept, some researchers emphasized on the role of opportunity recognition (Shane & Venkataraman, 2000), while others emphasized on the new venture creation role (Vesper, 1980).

### **2.6.2 Definition of Entrepreneurship**

The term entrepreneurship has been used for many decades, but up to date there is little unanimity about its definition (Williams, Round, & Rodgers, 2010). Therefore, in the literature many definitions can be found such as, creation of enterprise, creation of innovation, creation of employment, creation of growth, and creation of value (Morris *et*

*al.*, 2008). In addition to that, they implemented keyword analysis of entrepreneurship definitions, they found in literature 18 keywords used five times at least. Therefore, they defined entrepreneurship according to the definition of Stevenson and Jarillo-Mossi (1986, p. 10): "entrepreneurship is a process of creating value by bringing together a unique package of resources to exploit an opportunity". The historical definition was defined by the classic Joseph Schumpeter (1934) "The entrepreneurship is a deal we make related to a certain type of behaviour including initiative, organization and reorganization of socio-economic mechanisms and the acceptance of risks and failure".

In relation to that, Covin and Slevin (1991) argued that there is an agreement on the operational definition of entrepreneurship which contains three organizational-level behavior types, they are "top management risk-taking with regard to investment decisions and strategic actions in the face of uncertainty; the extensiveness and frequency of product innovation and the related technological leadership; and the pioneering nature of the firm as evident in the firm's propensity to aggressively compete with industry rivals".

Ireland, Mitt, Camp, & Sexton (2001) defined entrepreneurship as a context-dependent social process that creates wealth through teams and individuals by bringing together rare and unique resources to take advantage of marketplace opportunities.

In their attempt to compare entrepreneurship from entrepreneurial orientation, Slevin and Covin (1990) regarded entrepreneurship as organizational behavior or intrapreneurship, whereas entrepreneurial orientation refers to the methods, practices, process, decision making styles, and operating philosophy that top management use in their potential to manage entrepreneurially.

In the same line of definition, Hisrich and Peters (1992, p. 2) defined entrepreneurship as the process of "creating something different of value by developing the necessary time and effort, assuming the accompanying financial, psychological and social risks, and receiving the resulting rewards of monetary and personal satisfaction". Moreover, George and Zahra (2002, p. 5) defined entrepreneurship as "the act and process by which societies, regions, organizations, or individuals identify and pursue business opportunities to create wealth". Similarly, entrepreneurship has been defined by Churchill (1992) as the process of creating value by uncovering and developing opportunities through picking their advantages without regard to capital resources and human.

### **2.6.3 Entrepreneurial Orientation (EO)**

In the last few years there is growing scholarly in institutional dimension of communities and entrepreneurial activities which resulted in an important area of investigations between business communities and sustainability (Marti, Courpasson, & Barbosa, 2013). There has been published bulk of research in the field of entrepreneurship and entrepreneurial orientation (EO) concept. Although, entrepreneurial orientation (EO) has attracted interest of many writers, but the most majority of publications has come from USA authors and almost no empirical findings focus on Europe (Frank, Kessler, & Fink, 2010). In addition, they argued that the works of Harms and Ehrmann (2003), Kreiser, Marino, and Weaver (2002a; 2002b; 2002c), Marino, Strandholm, Steensma, & Weaver (2002), Wiklund (1998; 1999), Wiklund and Shepherd (2003; 2005), and other some published doctoral thesis like Haid (2004) and Harms (2004), are exceptions, however most of them are not empirical studies.

In the literature of entrepreneurship, many definitions emerged for the EO variable. As examples, Zahra and Covin (1995) defined EO as the potential instruments for reviving established organizations, where can be attained through risk taking, innovation, and proactiveness. There is an agreement among writers in literature that EO has three dimensions that they are positively related to organizational performance ( Knight, 1997; Lumpkin & Dess, 1996; Miller, 1983; Nomen & Slevin, 1993; Wiklund, 1999; Zahra, 1993; Zahra & Covin, 1995).

According to Frank, Kessler, and Fink (2010) EO is an organization's strategic orientation of capturing the specific entrepreneurial aspects of methods, decision making, and practices. Additionally, they argued that EO is a combination of three dimensions: risk taking, innovation, and proactiveness. These three dimensions have been suggested earlier by Miller (1983) as the components of the strategic posture of an organization that contain fundamental uni-dimensional strategic orientation (Jogaratnam & Tse, 2006). In addition to the above mentioned dimensions of EO, Lumpkin and Dess (1996) added more two additional dimensions, they are aggressiveness and autonomy.

In relation to the above mentioned, EO refers to the practices, behaviors, processes, and decision making styles that lead to entry into established or new markets with new or existing services or goods ( Lumpkin & Dess, 1996; Walter *et al.*, 2006; Wiklund & Shepherd, 2003). Additionally, EO indicates to the strategy making processes that give organizations with the essential foundations for entrepreneurial decisions and actions (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2003).

In their contribution to the same field, Zainol and Daud (2011) pointed out that EO has been recently considered as one of the most significant factor for the organization's growth and profitability. In addition, Stevenson and Jarillo (1990) argued that the high organization's growth correlates with an organization's EO. Additionally, in countries high crimes rates lead to increase the cost of protecting properties, and therefore it can be concluded that in less competitive environments there should be lower rates of entrepreneurship in higher crimes places (Osoba, 2009).

In relation to measurement of EO, there are nine items that developed by Covin and Slevin (1986, 1989), based on the work done by Miller and Friesen (1982) and Khandwalla (1976, 1977).

The distinction between entrepreneurship and entrepreneurial orientation has been revealed by many writers. For example, Bourgeois (1980) distinguished between entrepreneurship and EO as the strategic management literature between the content (entrepreneurship) and the process (EO). Similarly, Lumpkin and Dess (1996) described EO as the new entry that leads by practice, process, and decision making activity, whereas entrepreneurship defined as the new entry by itself. Therefore EO is regarded as the main construct in entrepreneurship research stream (Lumpkin & Dess, 1996).

#### **2.6.4 Dimensions of Entrepreneurial Orientation (EO)**

The entrepreneurial activities of established and existing organizations have been described as entrepreneurial orientation (Lumpkin & Dess, 1996; Wiklund, 1999), or corporate entrepreneurship (Burgelman, 1983; Zahra, 1993), or intrapreneurship

(Antoncic & Hisrich, 2001, 2004). It has been mentioned earlier that, entrepreneurial orientation (EO) indicates to the processes, practices, and decision making activities that drive for new business venture establishment (Lumpkin & Dess, 1996).

However, most of the studies agree that EO is a combination of three dimensions: risk taking, innovativeness, and proactiveness (Wiklund, 1999). These three dimensional model has been created by Miller (1983) and many studies follow this model (Covin & Slevin, 1989; Kemelgor, 2002; Naman & Slevin, 1993; Zahra & Garvis, 2000). In addition, some writers (Huhges & Morgan, 2007; Kreiser *et al.*, 2002; Lumpkin & Dess, 1996; Stetz *et al.*, 2000) have shown in their studies that these dimensions can vary independently from each other, whereas other few studies allow these dimensions to vary within their models and can create a multidimensional model (Kraus, Rigtering, Hughes, & Hosman, 2012). Therefore, for the more fully influence of EO, there should be assessed for the impact of each dimension of EO separately.

In addition to the three dimensions mentioned above, Lumpkin and Dess (1996) added other two dimensions, aggressiveness and autonomy. Competitive aggressiveness refers to the response organization to the changing environment the marketplace (Lumpkin & Dess, 2001), while autonomy refers to the independence of decisions and actions made by organization or individuals in the transformation process of their thoughts into actions (Lumpkin & Dess, 1996). In spite of their importance to enhance EO but few writers included them in their measurement of EO. Following the same way, our study has selected not to include aggressiveness and autonomy in studying the impact of EO construct on organizational performance. Thus, innovativeness, risk taking, and

proactiveness will be used only to study such effect. Therefore, the following few lines will discuss some definitions and background of innovativeness, proactiveness, and risk taking as dimensions of EO construct.

#### **2.6.4.1 Innovativeness**

Schumpeter (1942) was the first writer who pointed out the importance of innovativeness in the entrepreneurial process. Innovativeness is about giving support to creative processes, novelty, and development of new ideas through experimentation (Lumpkin & Dess, 1996). According to Gardner (1994), innovation is "the central value of entrepreneurial behavior".

Innovative organization, by introduction and creation new technology and products, develop a market niche with new services or products, cheaper price than others, differentiate themselves with better quality, and other customer value (Lee, Lee, & Pennings, 2001; Wiklund & Shepherd, 2005).

In relation to that, the innovativeness increases probability that an organization will recognize the first-mover advantages (Wiklund, 1999) and generate exceptional economic performance (Brown & Eisenhardt, 1998; Schumpeter, 1934). Moreover, innovativeness has become the most important factor that used to characterize entrepreneurship. Thus, some writers pointed out that innovativeness as the major among all the entrepreneurial profile traits, and therefore argued that the value creation is the essential role of entrepreneurs (Sharma & Dave, 2011).

Furthermore, innovativeness significantly contributes to the growth and profitability of entrepreneurial organizations (Covin & Wales, 2010; Covin & Miles, 1999) and explains organizational cultural readiness and innovation realization (Hurley, Hult, & Knight, 2005).

It is argued by Certo, Moss, and Short (2009), that innovation might be radical or incremental; either to construct on existing lineaments to produce improved products or service; or develop new services and products that match customers' demand in the marketplace.

#### **2.6.4.2 Proactiveness**

Proactiveness refers to the organization's willingness and ability to anticipate the new development as early as possible to be the first-mover against competitors, rather than waiting for emerging new development and then react to them (Frank, Kessler, & Fink, 2010). The proactive organizations are those organizations that always entering markets as the first mover, or the first followers to improve and develop services and products of the first movers (Davis, 2007). According to Lumpkin and Dess (2001) proactiveness is a forward looking, approach for opportunity seeking of new products and services, and responding in anticipating for future customers' demand to create shape and change in the environment of business.

In the past research, proactiveness has been used by researchers over a period of time to refer to the organization that is fast pioneer and innovator in introducing and marketing new services and products (Kraus & Kauranen, 2009). In other words, a proactive

organization is a leader rather than a follower (Sharma & Dave, 2011), has high levels of commitment, performance, and imagination (Caruana *et al.*, 2002).

#### **2.6.4.3 Risk-taking**

It was argued in the past that innovation cannot be without risk taking (Caruana *et al.*, 2002). Therefore, Miller and Friesen (1978) concerned risk taking as the degree that managers are willing to make resource commitment to have opportunities that appeared to have a reasonable chance of costly failure. Risk taking is often used to describe the uncertainty as a result of behaving entrepreneurially (Kraus *et al.*, 2012).

Numerous researchers in their empirical studies have found evidence that support the view of entrepreneurs as risk taker (Sharma & Dave, 2011). For example, Begley and Boyd (1987) found that founders of business scored higher than non founders on risk propensity.

Furthermore, Baird and Thomas (1985) distinguished between three types of risks: excessive commitment of resources into investment, venturing into ambiguous environment of business, and debt taking to engage in business. Similarly, Lumpkin and Dess (1996) discussed that risk has several interpretations in the type of situation where it is exercised. Additionally, risk taking is an important factor of EO and usually used to explain entrepreneurship (Osman, Rashid, Ahmed, & Hussain, 2011).

### **2.6.5 Entrepreneurial Orientation (EO) in Public Sector**

Due to economic globalization and changing business environment, there are many reforms that have been implemented in public sector organizations in recent years across many western countries (Caruana *et al.*, 2002). Entrepreneurial orientation (EO) is one of these new concepts that applied in public organizations to enhance performance. They argued that public organizations can provide new value to stakeholders by adopting an entrepreneurial approach. In addition, there are increasing among many public entities in effectively reengineering themselves by being proactive, innovative, and interested to have a degree of calculated risks.

As example, Mintzberg (1996) attacked myths of measurement in government organizations. He noticed that many benefits of measurement do not lend themselves to government organizations and that several activities are in the public organizations because exactly of measurement problems.

In relation to that, Miller (2011) pointed out that public organizations have rarely focused of EO studies; a main potential source has been neglected, specifically in governance conditions.

In a study EO in public enterprises in Malaysia, Entebang, Harrison, and Run (2010) argued that practitioners and scholars associate the EO of an organization with private business organizations, however the overall performance in public organizations in Malaysia continuous to be a main interest.

### **2.6.6 The relationship between Entrepreneurial Orientation (EO) and Organizational Performance**

The relationship between entrepreneurial orientation (EO) and organizational performance has been studied by many researchers. Most of these researchers focused on only the three main dimensions of EO, they are: innovativeness, proactiveness, and risk-taking. Other few researchers like Lumpkin and Dess (1996, 2001) argued that EO will be best explained by five dimensions adding to the previous three mentioned dimensions competitive aggressiveness and autonomy.

Rauch, Wiklund, Lumpkin, and Frese (2009) examined the relationship between EO and organizational performance by using meta-analysis approach. Their results suggested additional moderators should be assessed.

Lumpkin and Dess (2001) studied the linking between two dimensions of EO and organization performance with investigating the moderating role of industry life cycle and environment using data collected from 124 executives from 94 organizations by survey instrument. Their finding suggested that the two dimensions, proactiveness and aggressiveness, have different effect on organizational performance. In other words, they found that proactiveness was positively related to performance but aggressiveness was poorly associated with performance.

In addition to that field, Caruana *et al.* (2002) investigated the effect of environmental challenges and centralization on EO and performance in public sector entities based on data collected from 136 questionnaires by using structural equation modeling in the analysis stage. Their results confirm their hypothesized relationships in the model. In

other words, environmental variables positively affect performance, and EO is positively related with performance among public organizations.

In their attempt to explore the moderating role of the EO, Wiklund and Shepherd (2003) examined the effect role of the EO between knowledge-based resources and performance in SMEs. They found that knowledge-based resources are positively related to organizational performance and EO strengthening this relationship. Similarly, Keh, Nguyen, and Ng (2007) investigated the moderating effect of EO on the relationship between marketing information and performance of SMEs in Singaporean enterprises. Their data based on 294 questionnaires, and the results indicated that EO plays an important role in the utilization and acquisition of marketing information and has also a direct effect on organizational performance. In relation to that, Grande, Madsen, and Borch (2011) investigated how EO and firm-specific resources influence performance in small farm-based ventures. Results showed that unique competence, financial capacity, and entrepreneurial efforts impact performance.

In-depth interviews, observations, and documents analysis were used as the data collection techniques by Altinay and Altinay (2004) to examine the influence of organizational structure on EO and expansion performance. Their results showed that EO is an important organizational characteristic in both international management literature and entrepreneurship.

In the same line of research, Wiklund and Shepherd (2005) suggested a configurationally approach to study the impact of EO in small business performance. They used data collected from 413 Swedish organizations. They found that when combined EO with the

configuration approach explains variance in performance over the contingency model and main-effect-only model.

Similarly, Jogaratnam and Tse (2006) tested the EO organization performance and structure in the Asian hotel industry context, where data collected from 187 hotels. Results showed that entrepreneurial strategic posture is related with performance positively, whereas organic structure is related to performance negatively.

The moderating role of managerial power has been investigated by Davis *et al.* (2010), where they studied the influence of top managers' prestige, expert, and structural power of the relationship between EO and firm performance, based on data collected from 69 responses. They concluded that there is a positive influence of manager power trait on the relationship between EO and organizational performance. Similarly, De Clercq, Dimov, and Thongpapanl (2010) examined the roles of social relationships between functional managers as a moderator on the relationship between EO and performance, based on data collected from 232 Canadian firms. The results showed many positive moderating effects on the EO-performance relationship. In relation to that, Richard, Wu, and Chadwick (2009) investigated the role of CEO position on the relationship between EO and firm performance, based on 579 banks in USA. The results strongly support that CEO industry tenure moderates positively the relationship between EO and organizational performance.

The role of culture and its impact on EO-performance relationship has been investigated by Lee, Lim, and Pathak (2011). Their empirical study based on data collected from students in universities in USA, India, Korea, Fiji, and Malaysia. Their findings showed a significant difference among nations in most dimensions of EO.

In the same vein of research, Wang (2008) investigated the role of learning orientation and its impact on the relationship between EO and firm performance, based on data collected from 213 medium to large UK companies. Results indicated that learning orientation must be implemented to maximize the impact of EO on performance.

Dada and Watson (2013) investigated the perception of franchisor of the role of EO on organizational performance. The result was based on cross-sectional research design that indicated EO has a positive impact on organizational performance. Additionally, Boso, Story, and Cadogan (2013) examined the integration effect of EO, market orientation, and network ties on organizational performance. They found that high levels of EO and market orientation increase business performance.

The previously mentioned studies have shown the positive effect of EO in performance whether is considered as an independent variable or moderator variable. On the other hand, there are other researchers (Li, Zhang, & Chan, 2005; Smart & Conant, 1994; Stam & Elfring, 2008) who failed to find this positive relationship, or a negative effect of EO on performance (Hart, 1992), or a curvilinear of linkage between EO and performance (Tang, Tang, Marino, Zhang, & Li, 2008).

In connection to that, Rauch *et al.* (2009) used meta-analysis technique to analyze 53 samples from 51 studies with identifying internal and environmental moderators. The results suggested that more moderators should be examined.

In relation to entrepreneurship and police leadership, Smith (2009) investigated the relation of police leadership styles in influencing the investigation of crimes. He used

auto-ethnographic through observation. He argued that the entrepreneurial policing exists currently at the management speak level used by police leaders, academics, and politicians.

In summary, the researches of the effect of EO on public organizations performance are very little even in developed or developing countries, especially in the police department has been greatly neglected. Therefore, this study will try to fill the gap of knowledge of the impact of EO on organizational performance in the police department in one of developing countries.

#### **2.6.7 The Integration between Entrepreneurial Orientation (EO) and TQM**

Although, there are many studies that investigated the impact of total quality management (TQM) practices, and entrepreneurial orientation (EO) on organizational performance, but these studies neglected the integrated effect of TQM and EO together on organizational performance. TQM and EO can be considered as intangible resources based on resource-based view of the organization. Therefore, this study tried to bridge and fills this gap in the literature by examining the integrated effect of EO and TQM on organizational performance.

Due to the importance of entrepreneurial organizational culture (EOC) and its effect on the implementation of TQM, ERP and EO on organizational performance, the following sections were concentrated to review the literature that relevant to EOC and its effect on organizational performance.

#### **2.7 Entrepreneurial Organizational Culture (EOC)**

Culture of any organization realizes through people and is realized by the people (Duobiene & Pundziene, 2007). In the very rapidly changing business environment, outstanding leaders know how to formulate the organizational culture of organizations to fulfill short and long term objectives (Kuratko & Welsch, 2004). In addition, smart leaders understand and realize that successfulness and competitive advantage does not remain forever. Therefore, they should take care of the changing environment whether internally or externally.

### **2.7.1 Overview of Entrepreneurial Organizational Culture (EOC)**

Entrepreneurial organizational culture (EOC) can be observed at regional, national, and organizational levels (Osiri & McCarty, 2013). Beugelsdijk (2007) argued that the difference between regional and national success if economy is related to lack and presence of EOC which was reported previously by many researchers (Baumol, 1968; Hoselitz, 1957; Soltow, 1968). In general, culture refers to the beliefs and values that shared by persons of a society where including patterns of feeling, reacting, behaving, and premises underlying behavior (Rao & Swaminathan, 1995). Wilson (2001) argued that four factors influenced organizational culture, they are: leadership, business environment, management practices (formal socialization process), and informal socialization process. Plunkett and Attner (1994) identified seven factors that shape corporate culture, they are: the key business processes, formal arrangements, the social system, the external environment, technology, employees and other tangible assets, and the dominant coalition. In addition, the majority of entrepreneurs agreed that to grow and

survive in the currently business environment, business organizations should be efficient, creative, innovative, and profitable (Botezat, 2012).

Corporate entrepreneurship is continually changing environment and phenomenon of organizations to give more advantage and flexibility against those organizations which this phenomenon not found (Duobiene & Pundziene, 2007).

By joining entrepreneurial organization and organizational culture, we can speak about an organizational culture in which innovation, flexibility, mutual trust, open communication, and other lineaments of entrepreneurship are raised and identify it as an entrepreneurial organizational culture (Duobiene & Pundziene, 2007). Razavi (2012) pointed out that EOC is considered by many researchers as a prerequisite for corporate entrepreneurship, and uncovers by simple communication of people, and a fertile base for entrepreneurial activity of employees (Gibb, 1988; Kuratko *et al.*, 2004; Morris *et al.*, 2008).

In addition to that, corporate entrepreneurship is not a voluntary feature of profit aim, but extra culture, so there is a particular type of organizational culture called entrepreneurial organizational culture (EOC) (Jucevicius, 1998). Moreover, the concept of EOC has been presented by Cornwall and Perlman (1990) 20 years ago, but it is still unused further (Duobiene & Pundziene, 2007). Furthermore, it is strange that there are no studies in peer-reviewed publications specifically devoted to entrepreneurial organizational culture (Basso *et al.*, 2008), however previous research has suggested the important relationship and link between entrepreneurial activity and culture (Kreiser *et al.*, 2010), and how culture affects entrepreneurial behavior (Zahra, Jennings, & Kuratko, 1999). Moreover, it is very difficult to find any study that examined and investigated the effect of

entrepreneurial culture on the organizational performance of service business, however entrepreneurial orientation (EO) has been long suggested as a necessary feature of high-performing organizations (Covin & Slevin, 1991; Lee & Peterson, 2000).

Numerous researchers (Kanter, 1985; Sykes & Bloch, 1989) identified different components of entrepreneurial cultures: employees' involvement in the organization's development, organizational tolerance for experimentation and risk taking, ability to form autonomous teams of project, reject of turf defense behavior, and official recognition of successes. Similarly, McGuire (2003) determined six components of entrepreneurial organizational culture, they are: creative innovation, cooperation, open communication, organizational risk-taking, tolerance of the creative talents, and criticism acceptance. In addition to that, Cornwall and Perlman (1990) recognized ten main features of entrepreneurial organizational culture, they are: risk tolerance, respect to own activity, ethics, confidence and responsibility, people, emotional recognitions, satisfaction with work, leadership, focus to customer values, attention to details and finish, and effectiveness and efficiency. Moreover, Timmons (1999) argued that entrepreneurial organizational culture has the following components: clarity and being well-organized, high standards and pressure for excellence, commitment, responsibility, recognition, and esprit de corps. In his contribution to the same field, Peters (1997) identified different components for EOC as follows: listening, embracing change, customer focus, excellence, total integrity, involve everyone in everything, experimentation, fast-paced innovation, small starts and fast failure, visible management, and measurement and accountability.

### **2.7.2 Entrepreneurial Organizational Culture (EOC) and Organizational Culture (OC) Definitions**

The concept of entrepreneurial organizational culture (EOC) is not clearly defined in the previous literature. Raduta (2011) argued that the definition of EOC is difficult to be elaborated and that is why reported separately to individuals or organizations. In the literature, there are some definitions that related to entrepreneurial organizational culture (EOC) and organizational culture (OC). For example, Cornwall and Perlman (1990) defined EOC as a combination of particular features: respect to own activity, employees' assessment, satisfaction with work, focus to customer values, risk tolerance, ethics, confidence, responsibility, leadership, effectiveness, efficiency, and attention to details. In addition, Smircich (1985) argued that EOC can be viewed as one allows in different time to be a champion or a hero to emerge and take charge of innovative and entrepreneurial project. Moreover, entrepreneurial organizational culture is defined as a climate which stimulate and encourage generation of ideas, creativity, and experimentation (Brown, Davidsson, & Wiklund, 2001; Stevenson & Jarillo, 1986).

In connection with that, entrepreneurial culture is recognized by some researchers as an internal variable of entrepreneurial organization behavior under different denominations (Basso, 2008), for example, under the label of "organizational culture" (Covin & Slevin, 1991) or "core beliefs/values" (Guth & Girsberg, 1990). In brief, EOC is considered as the entrepreneurial activity of employees in organizations, characteristics that encourage, facilitate, and stimulate behavior.

The relation between entrepreneurial organizational culture (EOC) and organizational culture (OC) has been discussed by some researchers as mentioned above. EOC is a

result of combination of organizational culture and entrepreneurial organization. Organizational culture has been defined by many writers, for example, Hofstede (1980, 1997) defined it as the system of collective values and collective programming of mind that recognizes members of one group from another. Similarly, Schein (1985) defined organizational culture as a set of beliefs, values, norms, and assumptions grasped by the organization's members, that determines their feelings, thoughts, and actions (Pettigrew, 1979). In addition to that, Daft (2005) defined organizational culture as a set of key understandings, norms, assumptions, and values that is shared by persons of one organization and taught to new persons as correct.

### **2.7.3 The Relationship between Entrepreneurial Organizational Culture (EOC) and Organizational Performance (OP)**

It is clear that entrepreneurial characteristics of people are influenced by culture (Razavi, 2012). Their study examined the relationship between the organizational culture and the characteristics of personality of sports teacher. As mentioned above by some researchers that entrepreneurial organizational culture has been greatly neglected, however there are some studies suggested the importance of studying it. Most studies focus on culture and organizational culture as a significant component that related to organizational effectiveness (Paulin, Ferguson, & Salazar, 1999), a source of competitive advantage and prime factor for failure or success (Trefry, 2006), and distinguish members of one organization from another (Hofstede, 1997). Culture is considered as a key factor and the initial step in reinforcing entrepreneurial organizational activity (Razavi, 2012).

Denison (1990) argued that EOC place should be along with organizational culture adaptation, where both types of culture focus to the dynamic and the external

environment. In addition, one of the most features of entrepreneurial organizational culture is to achieve objectives; this should be supported by performance appraisal and reward for achievement (Sathe, 1985).

There are some conceptual papers that address entrepreneurial culture such as (Cornwall & Perlman, 1990; Duobiene & Pundziene, 2007; Gibb, 1988; Kuratko *et al.*, 2004; Morris *et al.*, 2008; Peter, 1997; Razavi, 2012; Timmons, 1999), but there is no single study that examines the relationship and impact of EOC on organizational performance. However, previous research described entrepreneurial organizational characteristics are more related to organizational culture research (Duobiene & Pundziene, 2007). Beugelsdijk (2007) argued that there is no till now well-developed theory regarding the effect of EOC on regional or national development of economy, and he reported that the empirical studies related to EOC are either case based (Saxenian, 1994) which have the limitation of generalization, or occasional case which measured by a fixed effect or the residual (Davidsson, 1995; Wagner & Sternberg, 2002). Additionally, he argued upon his awareness that there are no empirical studies related to the specific role of EOC.

On the other hand, the relationship between organizational culture and organizational performance has been abundantly examined. For example, Kim, Lee, and Yu (2004) argued that the strength of an organizational culture relates to organizational performance. Moreover, Ogbonna and Harris (2000) concluded that the impact of organizational culture on organizational performance have been anecdotal. In relation to that, Lee *et al.* (2004) examined the organizational cultural implication on performance in

Singaporean insurance companies, and they found that cultural strength and innovation are correlated with the sum insured.

#### **2.7.4 The Rationality of the Expected Mediating Effect of Entrepreneurial Organizational Culture (EOC) on the EO and Organizational Performance relationship**

As has been mentioned earlier that the role of entrepreneurial organizational culture (EOC) as a moderator or mediator variable did not examine or investigated. On the other hand, organizational culture and its role in influencing performance have been widely examined in the literature of TQM, ERP, and EO. Entrepreneurial organizational culture (EOC) is the joining of two important variables, organizational culture and entrepreneurial organization (Duobiene & Pundziene, 2007). In EOC we can expect more impact and influence than organizational culture; where there are some features will be added to the culture such as innovation, flexibility, open communication, mutual trust, and more other features of entrepreneurship (Duobiene & Pundziene, 2007). Therefore, this study will contribute to knowledge by examining new mediating variable that contains features of both organizational culture and entrepreneurship. Additionally, organizational culture and entrepreneurship studies and their influence on organizational performance are abundant in literature.

In relation to entrepreneurial orientation and organizational culture, several studies emphasized the role of organizational culture as a motivator for strong EO (Lee, Lim, & Pathak, 2011). In addition, Marino *et al.* (2002) examined the moderating role of national culture on the EO-strategic alliance formation. They found that strong EO and cultural tendency for uncertainty avoidance, individualism, and masculinity impacts alliance

formation. In connection with that, Lee *et al.* (2011) summarized those previous studies, found suggested the mediating and moderating effect of culture on EO that ultimately has significant impact on organizational performance. In relation to that, Zainol and Daud (2011) concluded that organizations need new paradigm to inculcate an entrepreneurial culture and different approaches towards entrepreneurship.

This study relates to different theoretical underpinning theories, therefore the following section discussed some of the suitable theories that might be related and match the purpose of this study.

## **2.8 Underpinning Theories**

Due to the nature of variables used in this study, different underpinning theories could be appropriate to theoretically underlie this study's framework. The following sections discussed these underpinning theories with supporting arguments. These theories include Resource-based view theory, Knowledge-based view, and Innovation theory.

### **2.8.1 Resource-Based View Theory**

In the strategic management literature, the resource-based view of the firm (RBV) has been considered as one of the most growing research area in the last few decades (Galbreath, 2005). The theory of RBV was first introduced by Wernerfelt (1984) where he argued that the internal resources can determine the organizational success. These resources can be either intangible or tangible assets (Collis, 1994), or capabilities such as accumulated skills and knowledge (Teece, Pisano, & Shuen, 1997).

The RBV conceptualizes the firm as a set of resources, where many resources differ in their importance in creating an added value for a firm (Barney, 1991). In addition, he argued that the firm's resources are the firm's reputation employees', knowledge and skills, brand names, and the capital equipment. Moreover, he pointed out that the firm's resources are the most important factors for achieving sustainable competitive advantage. Therefore, the main competitive advantage's sources to accomplish superior performance are rare, valuable, and incomparable resources of the firm. These types of resources are considered as the intangible strategic resources of the firm (Barney, 1991, 2002).

Additionally, the RBV theory underlines on the match between the organizational capabilities and the available opportunities. Therefore, the mechanism of RBV is to take into account the full use of available resources in the firm to build the core competencies for obtaining and sustaining competitive advantage (Makadok, 2001). As a result of that, competitors will face difficulties to achieve the same level of competitive advantage if the firm considers different factors such as the internal organizational strategies, access to useful information resources, and human capabilities. (Barney, 1986; Russo & Fouts, 1997). Therefore, organizations should establish the link between internal capabilities and external environment to achieve the desired competitive strategic situation.

The impact of RBV on the competitive advantage of the firm can be noticed from the angle that the RBV focuses on the importance of resources in sustaining and originating competitive advantage of the organization, thus, it should improve the mechanism of selecting the resources with great potential value (Makadok, 2001). Additionally, the internal and external environment should be aware by the organization to have the

capability of planning and designing the most effective and suitable action plans (Barney, 1986). Moreover, the capabilities of the organization can increase the importance of the available resources and help in the effective use of these resources (Prahalad & Hamel, 1990).

In particular, the objective of this study is to examine the effect and the relation between TQM, ERP, EO, and EOC on the organizational performance. While reviewing comprehensively the literature, the variables applied in this study have been underpinned theoretically by the RBV. As an example, TQM has been considered as one of the main resources of competitive advantage (Abdi, Awan, & Bhatti, 2008; Reed *et al.*, 2000; Escrig-Tena, 2004). The other variable, EO is considered also as a unique intangible another resource of competitive advantage (Weerawardena & Coote, 2001; Runyan, Huddleston, & Swinney, 2006). Many previous studies mentioned that EO is the key source for the project to achieve sustained competitive advantages, and there is a positive relationship between new venture performance and EO (Chen, Tzeng, Ou, & Chang, 2007; Covin & Miles, 1999; Zahra & Garvis, 2000). Furthermore, ERP systems can lead an organization towards creating generic processes and the source of competitive advantage (Davenport, 1998). ERP is considered as a unique organizational resource (Hwang & Min, 2013). Additionally, Laframboise and Reyes (2005) in their study examined the coexistence of ERP applications and quality management initiatives as the source of competitive advantage. They found that ERP implementation influences indirectly performance and competitive position through interaction with other resources like TQM. Moreover, OC and EOC have been regarded as a source of competitive advantage (Barney, 1986; Denison, 1990). Additionally, Wakchaure, Nandurkar, and

Kallurkar (2011) pointed out that TQM and ERP have stood out in response to the competitive push.

In summary, the above mentioned arguments revealed that the variables used in this study could be considered as sources of the organizational competitive advantages, therefore, justifies the use of RBV as one of the underpinning theories in this study.

### **2.8.2 Knowledge-based View Theory**

In the last two decades of the twentieth century, the resource-based theory of the firm has received attention as a substitution to the competitive advantage or product-based (Porter, 1980). Conner and Prahalad (1996) pointed out that based on the capabilities and resources theory of the firm, knowledge is considered as one of the source to achieve a competitive advantage. Thus, knowledge management is very critical for successful emerging of new products (Li & Calantone, 1998), and the innovation process (Powell *et al.*, 1998).

Knowledge-based view (KBV) is an outgrowth of resource-based view theory (Grant, 1996; Decarolis & Deeds, 1999). Previously, Polanyi (1962) argued that in contrast with the traditional concept of knowledge, there is a new view of knowledge has been emerged based on the distinction between explicit and tacit knowledge. The tacit knowledge characteristics consider the innovation process as the most significant source of competitive advantage (Prahalad & Hamel, 1990), and in turn, the innovation converts the tacit knowledge into explicit knowledge (Zack, 1999).

Subramaniam and Youndi (2005) mentioned that the innovative capability of the firm depends widely on the knowledge and the intellectual assets it has. In addition to that, Nonaka and Takeuchi (1995) pointed out that the firm's ability to deploy those knowledge and assets, and considering the innovation process as the most knowledge-intensive business processes. Therefore, KBV can be a useful framework to improve a firm's innovation in an effective path (Diaz-Daiz, Alger-Diaz, & DeSaa-Perez, 2008).

Furthermore, Sveiby (2001) identified nine basic knowledge transfers that can create value to the firm, namely, between individuals, from the external structure to individuals, from the internal structure of individual competence, from external to internal structure, within the internal structure, from individuals to the external structure, from individual competence into the internal structure, within the external structure, and from internal to external structure. In spite of having legacy systems and culture that prevent the leverage, these nine knowledge transfers exist in most firms (Sveiby, 2001).

In summary, KBV underlies this study. One of the purposes of this research is to investigate the role of organizational excellence by enhancing superior performance as a result of using and implementing TQM, ERP, and EO. Previously, it has been indicated that innovation is the main construct of excellence that it leads ultimately to organizational performance. In addition, Sciascia *et al.* (2014) argued that the knowledge-based view of the firm is considered as one of the most adopted theories in the field of entrepreneurship. Therefore, these variables used in this study have been underpinned theoretically by KBV.

### **2.8.3 Innovation Theory**

Based on the resource and capabilities theory (RC) of the firm, knowledge is considered as a source of competitive advantage (Conner & Prahalad, 1996). Therefore, the significance of knowledge as an important source of competitive advantage is still high for sectors where innovation as a continuous process of development (Pisano, 1994). In an ancient time, Schumpeter (1934) argued that innovation is the efficiency increasing through findings new ways of combining production outputs. Due to that, the interpretation of the existing knowledge is important for innovation (Galunic & Rodan, 1998). In another sector, the innovation in service sector demands the integration of several and expert knowledge associated to the delivery system (Leonard-Barton, 1992).

In relation to that, Aranda and Molina-Fernandez (2002) pointed out that innovation patterns differ in manufacturing versus service industries. In addition, innovation in service industry remains as a main source of competitive advantage.

Earlier, Robertson (1971) pointed out that there are degrees of innovation range from low to medium and high. The lowest degree of innovation is called a continuous innovation that contributes only in small change to the existing service or product. This type of innovation can be easily imitated by competitors and only give short-term advantages. At the medium degree, the existing service or product is provided with a new format that helps to change customers' behavior. In other words, it is called a dynamically continuous innovation. The high level of innovation is called a discontinuous innovation that changes the customers' behaviors that takes many decades to change and diffuse.

The innovation rate is considered a main driver of competitiveness (Porter, 1985) and the engine for driving the economy growth (Hafeez, Shariff, & Lazim, 2012). In addition to that, Schumpeter (1934) argued that innovation consists of five types. The first two types contain new methods of new sources of supply and production, whereas the other three types can be considered as product innovations, they are, new quality of a good or a new good, new industry structure, and opening new market.

Dabic, Cvijanovic and Gonzalez-Loureiro (2011) argued that to explain the growth through change by the innovation theory should begin from RBV theories of the firm to consist the importance of knowledge.

Innovation is considered as the main source for excellence and entrepreneurship. Therefore, in order for organization to excel and gain advantages should have innovative strategies, practices, ideas, products, and services For the purpose, innovation theory has been selected as one of the theories that can underlies this study. In other words, organization can achieve excellent degrees of performance through implementing innovative strategies such as TQM and ERP by doing excellent practices to achieve superior performance.

## **2.9 Summary**

This chapter summarizes the past literature review that related to the variables under investigation in this study. It highlights on the previous studies that investigated the relationships between organizational performance (OP), organizational excellence (OE), total quality management (TQM), enterprise resource planning (ERP), entrepreneurial orientation (EO), and entrepreneurial organizational culture (EOC). In addition, it

provides a critical review of the most important issues about the constructs that form the theoretical framework of this study.

It begins with introducing the dependent variables, namely, organizational performance through discussing the most important issues related to performance in different sectors in general and in public sector in particular. The other variables whether independent variables or mediating variables also have been discussed. This chapter also tries to explain the relationships between these variables based on the literature review of the past studies. Based on the comprehensive literature review, many conclusions can be summarized as follows:

First, there is a bulk research that has been conducted by many researchers regarding the effect of TQM on organizational performance. However, many studies reported a positive and significant relationship between TQM and organizational performance; other studies reported adverse results that there is no significant effect and sometimes TQM can affect the performance negatively. Due to this inconclusive findings in the previous literature, this study is an attempt to investigate why and how their relationship happens and what other factors may explain in better way. Therefore, organizational excellence has been proposed as a mechanism to explain this relationship.

Second, there are also many studies examined the effect of ERP on organizational performance. Some of these studies found a positive and significant impact of ERP on organizational performance, however, others found adverse results that ERP can affect the performance negatively and sometimes it is the main reason for collapsing due to some critical successful factors. To solve this inconsistency, organizational excellence

has been proposed as a mediator to explain the relationship between ERP and organizational performance.

Third, as the situation of TQM and ERP, EO were found to have inconclusive results when examined with organizational performance. Some researchers argued that there is a need for mediator variable that can play a mechanism role between EO and organizational performance. In addition, these researchers argued that investigating the direct effect of EO on organizational performance is not enough, therefore examining the indirect effect can bring more concluding results.

Fourth, this chapter discusses the development of the theoretical framework. In other words, the relationships between the variables under investigation have been gathered and combined to emerge the new and unique framework of this study.

Finally, the underpinning theories, that have been used to explain the theoretical framework, explained and discussed. Three underpinning theories have been used to explain the theoretical framework of this study, they are: resource-based view (RBV), Knowledge-based view, and innovation theory. However, RBV is the main theory, the other two theories are employed to complement it.

## **CHAPTER THREE**

### **RESEARCH FRAMEWORK AND HYPOTHESES DEVELOPMENT**

#### **3.1 Introduction**

This chapter discusses the development of the research framework and explains the linkages among all variables in this study. The variables involve Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Excellence, Organizational Performance, and Entrepreneurial Organizational Culture. According to the previous literature review of the relationships between variables, the hypotheses of the study were developed to test hypothesized relationships.

#### **3.2 Development of Theoretical Framework of this study.**

Based on the previous literature review explained above regarding the theoretical and managerial issues, the framework of this study was developed. Many gaps were discovered between variables that encourage for more investigation about the relationships between the proposed variables. In the previous chapter variables were discussed separately with performance and if there is any relationship between variable also explained. In other words, the research framework of this study is formed based on the previous literature review that contains the relationships between variables under investigation. The direct relationships between independent variables and dependent variable have been studied separately. In addition, some relationships between independent variables, mediating variables, and dependent variable also investigated

previously. The examination of the joint effect of TQM, ERP, EO, organizational excellence on performance is lacking in the literature.

Unlike organizational performance, organizational excellence and its role have been neglected. The relationship between organizational excellence and organizational performance is limited and not clearly defined (Antony & Bahattacharyya, 2010; Pinar and Girard, 2008). These results produce a research gap that can be filled in this study. However, there is a lack of studies that investigated the relationship between organizational excellence and organizational performance, some of them found a positive and significant relationship between them (Antony & Bahattacharyya, 2010; Ooncharoen & Ussahawanitchakit, 2008; Pinar & Girard, 2008). The limited studies call for more research to be conducted to fill this gap. The current study, therefore, is an attempt to bridge this gap for the sake of increasing studies on the relationship between organizational excellence and organizational performance in developing countries such as UAE. The study conducted by Pinar and Girard (2008) helped in formulating the framework of this study by using organizational excellence as a mediator. In their study organizational excellence was an independent variables that leads to performance through leadership.

Another gap was found in the relationship between TQM and organizational performance. Previous literature reported a positive and significant effect of TQM on organizational performance (, Rungtusanatham, & Schroeder, 1995; Choi & Eboch, 1998; Demirbag et al, 2006; Talib, Rahman, & Qureshi, 2013; Terziovski & Samson, 2000; Wang, Chen , & Chen, 2012; Zehir, Ertosunb, Zehir, & Muceldilli, 2012), however other did not find this significant effect (Davis, 1997; Powell, 1995; Kober, Subraamanniam, &

Watson, 2012; Westphal, Gulati, & Shortell, 1996). These inconsistent results create a research gap that should be investigated further by introducing new variable that may explain the relationship in better way. To achieve this purpose in this study, organizational excellence was proposed to mediate the relationship between TQM and organizational excellence. The relationship between TQM, excellence, and performance has been studied by many researchers such as Mele and Colurcio (2006) that used in establishing the current framework of this study.

In the current rapidly changing environment, organizations need a powerful system that can integrate their processes with others or within their boundaries. Therefore, information technology has become an important factor for organizations to achieve performance, success, and competitive advantages. As argued by many researchers, an ERP system is considered a significant technological innovation in the last few years (Jha & Joshi, 2007). However, ERP can increase organizational performance and add values to organizations (Davenport & Brooks, 2004; Irani & Love, 2001; Kamhawi, 2008; Kale, Banwait & Laroija, 2010), it can also affect the performance negatively (Hunton, Lippincott, & Reck, 2003; Velcu, 2007; Wieder, Booth, Matolcsy, & Ossimitz, 2006). These inconclusiveness findings, due to some CSFs, represent a research gap that needs more investigation. In this study, the relationship between ERP and organizational performance intervened by organizational excellence that can explain why and how this relationship happens. For the purpose of including ERP in the framework of this study, Stratman and Roth (2002) study was employed.

EO construct is considered one of the most important strategies for survival and growth (Sila & Ebrahimpour, 2002). Managers and leaders with entrepreneurial traits can affect the performance positively than others who do not have. There is a bulk of research in the literature review that examined the relationship between EO and organizational performance, but it is not consistent. Some authors argued that the inconsistent results are due to the lacking of mediator that may explain the relationship between them (Harms, 2013; Harms ; Lumpkin and Dess, 1996; Venkatraman, 1989; Vij & Bedi, 2012). Organizational excellence as an organizational activity may have the power to mediate this relationship and play the mechanism role to give more explanation. Additionally, entrepreneurial traits are activities that can be created and developed through diffusion entrepreneurial cultural characteristics. Therefore, an entrepreneurial culture is needed to increase the awareness entrepreneurially. The current framework of this study has been proposed as a part from study conducted by Al-Swidi and Jusoh (2012). They employed EO as independent variable that affect organizational performance through EOC as a mediator variable.

The above discussion revealed gaps in the previous literature and the relationships between variables. In addition, it creates a motivation to generate the theoretical framework of this study. As proposed in most previous studies, this study proposed TQM, ERP, and EO as independent variables whereas organizational performance was proposed to be as independent variable. Organizational excellence and EOC were planned to be mediator variables. This theoretical framework will be hypothesized and analyzed in the next chapters.

### 3.3 Theoretical Framework of the study

Based on the critical literature review regarding the managerial as well as the theoretical issues discussed in the previous chapters, the research framework of the study was developed as depicted in the following.

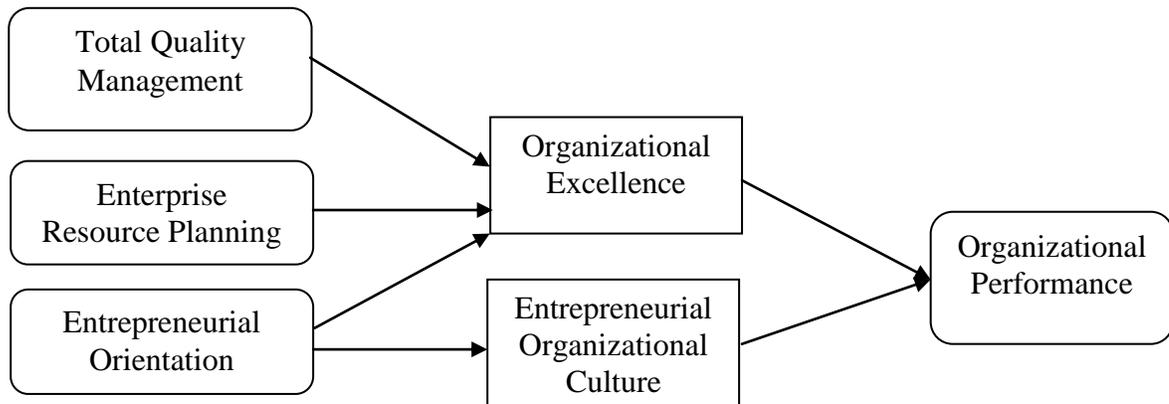


Figure 3.1  
*Research Framework*

The variables in the above model of the study are categorized into exogenous (independent variables) and endogenous (dependent variables). However the exogenous variables are not affected by other variables, endogenous variables are affected by other variables, and sometimes at the same time may affect other variables in specific model (Muhamad, 2008). More specifically, the exogenous variables in the above model are total quality management (TQM), enterprise resource planning (ERP), and entrepreneurial orientation (EO), whereas the endogenous are organizational excellence (OE), organizational performance (OP), and entrepreneurial organizational culture (EOC).

### **3.4 Hypotheses Development**

Based on the thorough review of the relevant literature, the hypotheses of the study were developed in line with the research questions and objectives that have been discussed in the first chapter. The following sub-sections discuss the process of the hypotheses development.

#### **3.4.1 TQM practices and Organizational Performance**

Total quality management (TQM) is considered as an approach for improving the quality of services and goods through the participation of employees from all levels and functions of an organization (Pfau, 1989). Literature of TQM shows that there are numerous studies reported the results regarding the effect of TQM practices and organizational performance (Terziovski & Samson, 1999). There are many rigorous studies that examined this relationship such as the one done by Powell (1995). This study examined TQM as a potential source of sustainable competitive advantage. In addition to this study, there is another complete empirical study that examined the relationship between quality practices and organizational performance by Sluti (1992) and Terziovski & Samson (1999). The findings of this study were found to be mixed results with regard to its performance implications (Abusa & Gibson, 2013). In other words, quality practice has a significant positive effect on performance.

A comprehensive review of the TQM related literature showed that the majority of the conducted researches reported a positive and significant relationship between TQM practices and organizational performance (Fotopoulos & Psomas, 2010; Huarng & Chen,

2002; Sila & Ebrahimpour, 2002; Kumar *et al.*, 2009; Valmohammadi, 2011; Yusuf *et al.*, 2007). In addition, many researchers found that TQM practices impact positively non-financial performance (Demirbag *et al.*, 2006); tangible benefits (Zairi *et al.*, 1994); customer satisfaction, reduce manufacturing cost, and increase productivity (Dale & Wan, 2002); enhance market competitiveness (Chong & Rundus, 2004); increase market share growth (Kaynak, 2003); affect both financial and non-financial performance (Singh & Smith, 2004); and enhance overall organizational performance (Powell, 1995). Moreover, it has been pointed out about the rareness of consistency in the quality management research due to the lack of universal and standard acceptable measurement instruments (Salaheldin, 2009).

The above arguments and other supporting results led to the following hypothesis to be proposed

***Hypothesis 1 (H1): TQM has a positive and significant effect on the organizational performance.***

#### **3.4.1.1 TQM-Management Leadership and Organizational Performance**

In studying the TQM-performance relationship, it has been emphasized by some researchers that TQM can be studied as a single construct (Terziovski & Samson, 1999). Some other researchers such as Dow *et al.* (1999) and Powell (1995) pointed out that only some of TQM practices result in positive relationships with organizational performance (Khairul Anuar, 2002; Yasin *et al.*, 2004). These two mixed results suggested that several TQM constructs have significant effects on organizational performance (Hendricks & Singhal, 2001).

It has been argued by many quality experts that the key successful management of quality starts at the top management of the organization (Lakshman, 2006). Management leadership is regarded as one of the most important components of the TQM strategy (Harrington & Williams, 2004). Several researchers identified different dimensions of TQM (Ahire *et al.*, 1996; Powell, 1995). For example, Sila and Ebrahimpour (2005) identified seven dimensions of TQM, namely leadership, strategic planning, customer focus, information and analysis, human resource management, process management, and supplier management. They found that leadership and information analysis has the greatest direct effect on the other factors. In TQM implementation, effective leadership can develop a clear vision, mission statement, and strategies to support the mission (Yusuf *et al.*, 2007). Additionally, Oakland (2011) argued that TQM requires strong leadership and the greatest tangible advantage of excellence in leadership is the improvement of overall organizational performance.

In relation to that, the role of top management is very crucial for developing and supporting organizational culture based on teamwork spirit, participative decision making process, effective communication, and effective training (Koehler & Pankowski, 1996). Thiagarajan and Zairi (1997) argued that the lack of leadership and top management commitment is considered as the main reason for 80% of TQM failure.

In summary, the literature of TQM practices empirically emphasized the relationship between management leadership and organizational performance (Anderson *et al.*, 1994; Arawati, 2005; Powell, 1995; Valmohammafi, 2011; Yasin *et al.*, 2004). Therefore, the following hypothesis was proposed:

***Hypothesis 2 (H1a): TQM-Management Leadership has a positive and significant effect on the organizational performance.***

### **3.4.1.2 TQM-Strategic Planning and Organizational Performance**

Strategic planning comprises the organizational activities which an organization formulates, implements and evaluates all its strategies to achieve the organizational objectives (Srinidhi, 1998). In addition, strategic planning is considered as one element of the TQM strategy. Therefore, TQM-strategic planning concerns the organizational capabilities, like skilled employees and an adequate funds and time to accomplish the goals (Black & Porter, 1996). In other words, the strategic planning's role is to manage the available resources in organizations for achieving higher degrees of success, and to direct capabilities towards gaining the planned objectives.

The importance of strategic planning has been realized by some researchers. They claimed that the organization capability to survive in an uncertain business environment can be resolved by strategic planning policies (Chenhall, 2005). Moreover, strategic planning considers the internal organizational process where mission and vision are translated into plans and actions (Tari, 2005). In connection with that, Sila and Ebrahimpour (2002) argued that strategic planning as one of the TQM elements should set guidelines of how the organization can design TQM practices to achieve goals and to satisfy its customers' needs and meet their expectations.

Based on a comprehensive review of the of the TQM literature, there have been several studies that conclude a significant relationship between strategy and organizational

performance (Li *et al.*, 2003; Sila & Ebrahimpour, 2005; Terziovski & Samson, 1999; Wu *et al.*, 1997). Thus, the following hypothesis was proposed to be tested:

***Hypothesis 3 (H1b): TQM-Strategic Planning has a positive and significant effect on the organizational performance.***

### **3.4.1.3 TQM-HRM and Organizational Performance**

Human resource management (HRM) is an element of TQM strategy that includes employee empowerment, employees' training, and employees' involvement (Ahire *et al.*, 1996). When implementing TQM, employees should be encouraged to involve in decision-making, problem solving, and the financial success of the organization (Yusuf *et al.*, 2007). That is, everyone in the organization is able to participate in the business and to know the current and future situation of organizational financial success. Through this knowledge, employees can involve more closely in the core business and participate positively in enhancing organizational performance.

Therefore, TQM strategy motivates all employees in the organization to be closer to the objectives and goals of the organization (Collard, 1989). HRM is an important element in TQM strategy. Therefore, organization should build and develop TQM models that include HRM to help employees to accept and implement TQM successfully (Kekale & Kekale, 1995). Additionally, Akdere (2006) pointed out that TQM practices through employees' input positively related to organizational competitiveness.

Implementation and development of TQM practices in any organization need an organizational culture change to help employees to accept and adopt TQM model. Employees are the live asset of any organization, so if they get enough empowerment,

training, and involvement in teamwork, they are expected to add a value to the organization and can be regarded as the main successful drivers for TQM implementation process.

A review of the literature of TQM revealed that there are many studies reported the positive relationship between HRM and organizational performance (Arawati, 2005; Flynn *et al.*, 1995; Powell, 1995; Yasin *et al.*, 2004). Therefore, according to the previously discussed literature, the following hypothesis was proposed for an empirical testing:

***Hypothesis 4 (H1c): TQM-HRM has a positive and significant effect on the organizational performance.***

#### **3.4.1.4 TQM-Service Design and Organizational Performance**

The factor of TQM “service design” is more related to customer. Good service design in the organization contributes positively to the organizational performance by increasing customers’ satisfaction and improving reputation (Lakhe & Mohanty, 1995). With good service design the TQM of the organization can be able to enhance the service performance in different dimensions. In addition, it leads to improve the processes in the organizations that will reflect in reduction of cost of poor quality such as late delivery, scrap, and rework. Therefore, the suitable service design offered by the organization can lead to increased customers’ satisfaction, better work process, and can reduce the wasted time, and subsequently increase business profitability. According to Dewhurst *et al.* (1999), TQM encourage all departments’ participants to involve in the design process to achieve the optimal design to satisfy the customers’ requirements. He argued also new

service design have to be reviewed before production and marketing to clear specifications and requirements.

In the literature of TQM, there is a strong relationship between service design and organizational performance (Anderson *et al.*, 1994; Flynn *et al.*, 1995; Llorens-Montes & Verdu-Jover, 2004). According to that, the following hypothesis is proposed to be tested:

***Hypothesis 5 (H1d): TQM-Service Design has a positive and significant effect on the organizational performance.***

#### **3.4.1.5 TQM-Information and Analysis and Organizational Performance**

The information system is among the most critical factors that contribute positively to the TQM successful implementation (Ahire *et al.*, 1996). It is a combination of software, hardware, people, and procedures (Karthi, 2004). In the era of information and communication revolution, the importance of information and analysis system is the key driver of the effective performance (Saraph *et al.*, 1989). In addition, they pointed out that if an organization has an appropriate information system, it can significantly react to the rapid changes in the business environment because of its effective data presentation, data collection, and data dissemination.

In the literature there are many researchers who found a positive relationship between quality information system and organizational performance (Ahire *et al.*, 1996; Flynn *et al.*, 1995; Powell, 1995; Saraph *et al.*, 1989; Sila and Ebrahimpour, 2005). However, Samson and Terziovski (1999) found that hard factors of TQM such as information and analysis, and planning and process management, are neither significantly related nor negatively related. Additionally, Sila and Ebrahimpour (2005) found that information and

analysis had only an indirect impact on business results. Moreover, Samat, Ramayah, and Saad (2006) examined the relationship between TQM and market orientation where they found that information and communication does not have any significant impact on market orientation. Due to the inconsistency in previous studies, the following hypothesis was proposed:

***Hypothesis 6 (H1e): TQM-Information and Analysis has a positive and significant effect on the organizational performance.***

#### **3.4.1.6 TQM-Continuous Improvement and Organizational Performance**

The main aim of TQM strategy is to satisfy customers through continuous improvement endeavors in all organizational levels (Benavent, Ros, & Moreno-Luzon, 2005). Accordingly, organizations should develop their continuous improvement practices to cover all types of organizational processes including styles and management activities (Benavent *et al.*, 2005). Basically, the final goal of an organization is to generate results and outcomes that achieve a high level of customers' satisfaction (Baker, 2003).

The drivers of continuous improvement are quality-conscious customers and the critical innovation (Dean & Bowen, 1994). In order to support and enhance continuous improvement practices in organizations, there are many factors such as HRM, top management support, and efficient information systems (Escrig-Tena, 2004).

There are many previous studies that indicate the positive effectiveness of continuous improvement organization's long term competitive position and productivity (Yusuf *et al.*, 2007) and on organizational performance (Anderson *et al.*, 1994; Christos *et al.*, 2010; Flynn *et al.*, 1995; Lakshman, 2006; Powell, 1995). However, Burli, Kotturshettar,

and Dalmia (2012) found that continuous improvement, management support, and supplier management are not significantly impacting organizational performance. For this inconsistency, the following hypothesis was introduced for an empirical testing:

***Hypothesis 7 (H1f): TQM-Continuous Improvement has a positive and significant effect on the organizational performance.***

#### **3.4.1.7 TQM-Benchmarking and Organizational Performance**

Benchmarking strategy is used by some organizations to compare themselves and their performance with the most leading and successful competitors in the market. It is great to mention that the core of benchmarking practice is to analyze the services, products, and techniques that are used and produced by other competitors either in the same industry or other industries to achieve competitive advantage (Ahire *et al.*, 1996). Thus, process efficiency, cost saving, and customers' and employees' satisfaction are some criteria that can be used in benchmarking practice.

The positive impact of benchmarking on the organizational performance has been reported and concluded by many researchers (Ahire *et al.*, 1996; Arawati, 2005; Christos *et al.*, 2010; Powell, 1995; Terziovski & Samson, 1999). However, Dow *et al.* (1999) argued that some TQM factors such as benchmarking, closer supplier relationship, work teams, and advanced manufacturing technologies do not contribute to quality outcomes.

According to the above mentioned discussion, the following hypothesis was proposed:

***Hypothesis 8 (H1g): TQM-Benchmarking has a positive and significant effect on the organizational performance.***

### **3.4.2 Enterprise Resource Planning (ERP) and Organizational Performance**

In the current rapidly changing environment, organizations need to have capabilities to build, integrate, and reconfigure internal competencies (HassabElnaby, Hwang, & Vonderembse, 2012). Therefore, organizations develop and improve their capabilities to create competitive advantage by leveraging resources such as information system to meet customers' needs and to compete effectively with competitors (Teece *et al.*, 1997); improve customer service, reduce costs, and shorten cycle time (HassabElnaby *et al.*, 2012). Enterprise resource planning (ERP) is one of these systems that attracted the attention in the last few years (Elbanna, 2006). ERP provides organizations with many benefits, so they can be ready to face the rapid change in the technological revolution and meet changing expectations by providing timely, accurate, and integrated information to enhance organizational decision making (Trott & Hoecht, 2004).

However, ERP system are considered as a complex system due to the wide integrated modules and business processes that automate information flow, financial resources, and materials inside the organization by using a combined database (Kumar *et al.*, 2002). However, its implementation and emerging appropriate change in the organizational process can significantly improve responsiveness, flexibility, cost, quality, and performance (Motwani *et al.*, 2002).

A review of relevant ERP literature shows that there is an abundant research work conducted to examine the relationship between ERP systems and organizational performance. It can be seen that there are conflicting results obtained by these researches (Kang *et al.*, 2008). Many of them argued that ERP systems provide many benefits to

organizations and improve organizational performance (Bendoly & Kaefer, 2004; Chung *et al.*, 2007; Florescu *et al.*, 2010; Palaniswamy & Frank, 2002; Park *et al.*, 2007; Poston & Grabski, 2001; Shatat & Udin, 2012; Wang, 2005); financial performance (HassabElnaby *et al.*, 2012; Hunton *et al.*, 2003; Nicolaou & Bhattacharya, 2006; Velcu, 2007); non-financial performance (Wier *et al.*, 2007) customer services, reducing inventory, and improving communications (Kale *et al.*, 2010). Other researchers found that ERP systems may affect negatively organizational performance (Hitt & Brynjolfsson, 1996; Mohmood & Mann, 1993; Weill, 1992; Wieder *et al.*, 2006) due to some critical factors such as culture, the lack of training, education, and top management support and commitment.

According to the previous studies, most of failure of ERP is in the financial performance of the organization which is the main purpose of private organization whereas in the public organizations the most important is the operational efficiency and the cost effectiveness (Shad, 2011). Therefore, ERP implementation can be expected to have a success rate in the public sector more than private sector due to the previous reason and other critical success factors such as funds availability, top management support, and high technology. Based on these arguments and the previous literature, the following hypothesis is proposed to be tested:

***Hypothesis 9 (H2): Enterprise Resource Planning has a positive and significant effect on the organizational performance.***

### 3.4.2.1 ERP-Strategic IT planning and Organizational Performance

Some papers measured success of ERP by evaluating critical success factors such as top management, business process reengineering (BPR), user involvement, training and education, and vendor support (Al-Mashari *et al.*, 2003; Nah, Lau, & Kuang 2001; Somers & Nelson, 2001). In his contribution to this field, Stratman and Roth (2002) highlighted the critical factors that affect ERP after implementation process called ERP competence constructs. They defined ERP competence as “a portfolio of managerial, technical, and organizational skills and expertise hypnotized as antecedents to improved business performance after an ERP system is operational and functionally stable” (p. 602). Additionally, they synthesized eight ERP competence constructs, they are: strategic IT planning, executive commitment, project management, IT skills, business process skills, ERP training, learning, and change readiness.

Strategic IT planning describes the organization’s competence in matching capabilities of IT with the changing business requirements of the organization (Stratman & Roth, 2002). There are many studies that suggested that IT systems support the strategic goals of the organization (Fielder, Grover, & Teng, 1996; Miller & Cardinal, 1994; Sampler, 1998). Moreover, strategic IT planning assists organizations to ensure that the available IT technology goals are matching with the organization’s needs (Segars, Grover, & Teng, 1998). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 10 (H2a): ERP-Strategic IT planning has a positive and significant effect on the organizational performance.***

### **3.4.2.2 ERP-Executive Commitment and Organizational Performance**

Executive commitment refers to the willingness of top management in the organization to support ERP and allocate the required resources for successful ERP (Stratman & Roth, 2002). In addition top management provides budgetary resources, technical, and the required human, however full-time executive champions are the most successful for ERP project where they dedicate themselves to succeed the project (Ettlie, 1998). Furthermore, top management and a clear vision are fundamental for successful ERP implementation (Motwani *et al.*, 2005). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 11 (H2b): ERP-Executive Commitment has a positive and significant effect on the organizational performance.***

### **3.4.2.3 ERP-Project Management and Organizational Performance**

Project management encompasses the knowledge and skills in coordinating the monitoring and scheduling activities to guarantee that the proposed objectives of project implementation are achieved (Stratman & Roth, 2002). It is more related to the implementation of new initiatives that include installation of new IT systems. Additionally, project management is regarded as an important critical success factor for process change initiatives (Grover & Malhotra, 1997). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 12 (H2c): ERP-Project Management learning has a positive and significant effect on the organizational performance.***

#### **3.4.2.4 ERP-IT Skills and Organizational Performance**

An IT skill indicates to the ability to configure and preserve information system to support organizational business (Stratman & Roth, 2002). The IT skills are important at the time of installation of ERP and post-installation (Davenport, 1998). ERP systems are considered as a complex system that needs more skills in technology from users, which in turn will improve ERP efficiency to improve the overall performance of the organization. The previous arguments led to the following hypothesis to be tested:

***Hypothesis 13 (H2d): ERP-IT Skills have a positive and significant effect on the organizational performance.***

#### **3.4.2.5 ERP-Business Process and Organizational Performance**

Business process skills refer to the ability of understanding how the business operates, and predicting the effect of a specific action or decision on the rest of the organization (Roth, Julian, & Malholtra, 1995). ERP is not only improving the technological side of the organization, but also change and improve the process of the business stream to be more effective and suitable for the new changes. Therefore, business process skills are important to cope with difficulties and obstacles of the new changes. In other words, the user of ERP system should have the absorptive capacity (Roth, 1996). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 14 (H2e): ERP-Business Process Skills has a positive and significant effect on the organizational performance.***

### **3.4.2.6 ERP-Training and Organizational Performance**

ERP training is the process of teaching users to use the system efficiently in their daily activities (Stratman & Roth, 2002). The side scope of ERP requires a large number of people to be trained and to gain more skills while using an ERP system. Therefore, training cannot be only one time training, but continuous and regular training from time to another. Ettlíe (1998) argued that both regular review and formal training sessions are important to ensure that employees and managers have the sufficient skills to use the system and process changes. Additionally, many projects of ERP implementation process fail because of lacking a proper training (Bhatti, 2005), therefore, ERP training considered by many researchers as an important factor in the ERP implementation process (Esteves & Pastor, 2001; Somers & Nelson, 2003). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 15 (H2f): ERP-Training has a positive and significant effect on the organizational performance.***

### **3.4.2.7 ERP-Learning and Organizational Performance**

Learning refers to the activities designed to match ERP techniques from both external and internal resources (Stratman & Roth, 2002). For external perspective, activities such as benchmarking can be used to bring ERP best practices (Levitt & March, 1988). On the other hand, internal learning such as a human resource system can help to sustain competitive advantage (Barney, 1986). Therefore, incentive systems and communication linkages are the key points of competence for learning (Giffi, Rath, & Seal, 1990; Zuboff, 1988). The previous arguments led to the following hypothesis to be tested:

***Hypothesis 16 (H2g): ERP-Learning has a positive and significant effect on the organizational performance.***

#### **3.4.2.8 ERP- Change Readiness and Organizational Performance**

Change readiness denotes to the managerial strategies that used to conquer the resistance from the workforce while implementing an ERP system due to the operational changes (Stratman & Roth, 2002). Change management is an important factor that is regarded as one of the critical factors that mentioned in literature. It solves and manages the issue of change resistance which is considered as one of the main obstacles that affects the success of ERP implementation (Bhatti, 2005). Early users who involve in the ERP implementation process may need more attention to generate eagerness among them. In addition, dissatisfaction and uncertainty in the new change of processes should be handled early to avoid resistance from system users and to improve system efficiency (Guha, Grover, Kettinger, & Teng, 1997). Moreover, cultural readiness plays an important role that leads to successful ERP implementations (Motwani *et al.*, 2005).

The previous arguments led to the following hypothesis to be tested:

***Hypothesis 17 (H2h): ERP-Change Readiness has a positive and significant effect on the organizational performance.***

#### **3.4.3 Entrepreneurial Orientation (EO) and Organizational Performance**

Entrepreneurial Orientation (EO) refers to the practices, processes, behaviors, and decision making styles that lead to entry into new markets with existing or new goods and services (Lumpkin and Dess, 1996; Wiklund & Shepherd, 2003). It has been argued by Zainol and Daud (2011) that EO is considered as one of the most important factors for

growth and profitability of the organization. According to the previous studies, EO has five dimensions, namely risk-taking, innovativeness, proactiveness (Covin and Slevin, 1989; Kemelgor, 2002; Naman and Slevin, 1993; Zahra and Garvis, 2000). However, Lumpkin and Dess, (1996) added other two dimensions to the above mentioned, namely aggressiveness and autonomy.

In the literature of entrepreneurship, there is an agreement among writers in literature that EO has three dimensions; innovativeness, proactiveness, and risk-taking; that they are positively related to organizational performance (Al Swidi & Mahmood, 2011; Covin and Slevin, 1989; Knight, 1997; Lunpkin and Dess, 1996; Miller, 1983; Nomen and Slevin, 1993; Wiklund, 1999; Zahra and Covin, 1995; Zahra, 1993). There are two approaches of measuring EO and its relationship with performance. Some researchers examined the effect of overall constructs of EO and its relationship to performance, while others examined the impact of each dimension separately on organizational performance (Davis, 2007). In this study, the latter approach will be discussed to extract hypotheses concerning the relationship between EO's constructs and organizational performance.

Many researchers supported the positive relationship between EO and organizational performance (Al-Swidi & Al-Hosam, 2012; Arief, Thoyib, Sudiro, & Rohman, 2013; Brown *et al.*, 2001; Campos & Valenzuela, 2013; Covin & Slevin, 1986; Drucker, 1985; Hult, Snow, & Kandemir, 2003; Mahmood & Hanafi, 2013; Wang & Yin, 2012; Wiklund & Shepherd, 2003; Zhang & Zhang, 2012). However, although many researchers confirmed the positive effect of EO on organizational performance, some other studies reported adverse results (Dimitratos, Lioukas, & Carter, 2004; George, Wood, & Khan,

2001; Li *et al.*, 2009; Lumpkin & Dess, 2001; Wiklund & Shepherd, 2005). The attention given to EO is due to its effect on the overall performance of both public and private organizations. However, the effect of EO on the performance of public organizations was not extensively investigated in the literature.

In general, a comprehensive review of the relevant literature on entrepreneurship showed that many researchers argued that the higher degree of EO of an organization, the high level of performance, and profitability and competitive advantage (Covin & Slevin, 1991; Wiklund, 1999; Zahra & Covin, 1995). However, there is still inconsistency in the previous results were some writers who failed to find this positive relationship between EO and organizational performance (Brown *et al.*, 2001; Kaya & Syrek, 2005; Li, Zhang, & Chan, 2005; Stam & Elfring, 2008; Smart & Conant, 1994). Nonetheless the disagreement regarding the effect of EO on organizational performance, there is still a need to examine this relationship; therefore, following hypothesis is proposed to be tested:

***Hypothesis 18 (H3): Entrepreneurial Orientation (EO) has a positive and significant effect on the organizational performance.***

#### **3.4.3.1 EO-Innovativeness and Organizational Performance**

According to the multidimensional approach to examine the construct of EO, each dimension of EO and its relationship with organizational performance should be assessed. This study, as discussed earlier, considers the three dimensions namely, innovativeness, proactiveness, and risk-taking. Innovativeness is about giving support to creative processes, novelty, and development of new ideas through experimentation (Lumpkin &

Dess, 1996). It was argued that innovative and creative organization performs better than others that are not creative and innovative.

Additionally, innovativeness increases probability that the organization will be gaining the first-mover advantages (Wiklund, 1999) and create exceptional economic performance (Brown & Eisenhardt, 1998; Schumpeter, 1934). Moreover, innovativeness contributes significantly to the profitability and growth of entrepreneurial organizations (Covin & Wales, 2010), and realizes organizational cultural readiness and innovation realization (Hurley *et al.*, 2005). Additionally, some researchers found a positive and significant relationship between innovativeness and organizational performance (Wang & Yen, 2012; Jalali, 2012), however other did not find this significant effect (Kraus *et al.*, 2012). Therefore, the following hypothesis was proposed:

***Hypothesis 19 (H3a): Innovativeness has a positive and significant effect on the organizational performance.***

#### **3.4.3.2 EO-Proactiveness and Organizational Performance**

Proactiveness refers to the willingness of the organization and ability to expect new development as early as possible to be the first-mover against competitors, instead of waiting for emerging new development and then react to them in later action (Frank *et al.*, 2010). Therefore, a proactive organization is a leader rather than a follower (Sharma & Dave, 2011), has high performance, levels of commitment, and imagination (Caruana *et al.*, 2002). In addition, the importance of proactiveness as a key of entrepreneurial organization has been emphasized by studies in the field of entrepreneurship (Miller, 1983).

In entrepreneurship literature, there are many studies supported the significance of proactiveness for organizations and concluded the presence of positive significance between proactiveness and organizational performance (Bhuiyan, Menguc, & Bell, 2005; Kraus *et al.*, 2012; Lumpkin & Dess, 2001; Wang & Yen, 2012). Therefore, the following hypothesis was proposed:

***Hypothesis 20 (H3b): Proactiveness has a positive and significant effect on the organizational performance.***

### **3.4.3.3 EO-Risk-taking and Organizational Performance**

Risk taking refers to the uncertainty as a result of behaving entrepreneurially (Kraus *et al.*, 2012). It represents the organizational willingness to implement business activities and commit resources that have a high level of risks (Lumpkin & Dess, 1996). According to Begley and Boyd (1987), founders of business achieve higher than non founders on risk tendency.

Miller and Friesen (1982) reported that if the organization avoided to take risks then there will be no development of product effective strategies and will lead to the deterioration of its competitive advantage. Therefore, many researchers suggested that organizations should have a tendency towards risk taking to obtain a high level of competitive organizational performance (Hughes & Morgan, 2007). Wang and Yen (2012) found a positive and significant relationship between risk-taking and organizational performance; however, other studies did not find this significant effect (Kraus *et al.*, 2012)

Furthermore, risk-taking is very important elements for an organization, where avoiding risk taking exploitative actions to take advantage of the available opportunities that

related to customers and markets (Hughes & Morgan, 2007). In today's competitive environment, organization is risk avoided then result no new product development, and later will cause a drop of its competitive performance (Miller & Friesen, 1982). Based on the previous discussion, the following hypothesis was proposed:

***Hypothesis 21 (H3c): Risk-taking has a positive and significant effect on the organizational performance.***

#### **3.4.4 Total Quality Management (TQM) and Organizational Excellence**

Most quality gurus argued that quality management has the power to increase the profitability by improving the product's marketability through enhancing organizational performance and reducing the cost that occurs from failure and defects (Deming, 1986; Juran *et al.*, 1999). There are empirical evidence in the previous literature that TQM is positively associated with improving customer satisfaction, quality of products, competitive advantages, and market share (Fotopoulos and Psomas, 2010; Kaynak, 2003; Samson and Terziovski, 1999).

However, most of quality practices are in the right direction, but there still a shortage of realization the important role of employee in quality improvement process to achieve business excellence (Rashid & Aslam, 2012). Shukla (2013) argued that TQM can provide an explanation and processes for spontaneous investigation for excellence and quality.

The relationship between TQM and business excellence has been studied in the previous literature by many researchers who found a strong relationship. Sharma and Kodali (2008) found TQM excellence as significant factor for achieving excellence in manufacturing industry. The organization's purpose is not to have TQM but to adopt it to achieve

excellence and to contribute in achieving competitive advantage (Mele & Colurcio, 2006). In addition, TQM practices help organizations to enhance business excellence (Lee, 2002). He found that business excellence can be supported through implementing TQM. Moreover, Hassan *et al.* (2007) studied the impact of TQM and ISO 9000 on creating competitive advantages and business excellence. Their findings reported a significant effect of implementing TQM and ISO9000 to have customer satisfaction, productivity, product quality, and delivery. Based on the previous explanation and discussion, the following hypothesis was proposed:

***Hypothesis 22 (H4): TQM has a positive and significant effect on the organizational Excellence.***

#### **3.4.5 Enterprise Resource Planning (ERP) and Organizational Excellence**

However, there are extensive works in the literature of the ERP system, there is no an agreed definition between researchers. However, there are many definitions that describe ERP as enterprise-wide application packages that are integrated to support different business functions (Tarn *et al.*, 2002), an information system that integrates all business (Scalle & Cotteleer, 1994), an advanced technological solution system that integrate critical information within organization (Davenport, 2002), and an ERP as the basis for best management processes and best practices (Lee & Lee, 2000).

ERP as information technology instrument brings many advantages to the organization and lead to more efficiency, sustain competitive advantages, and increase organizational performance (Florescu, *et al.*, 2010; Kallunki, *et al.*, 2011; Mische, 2002; Radding, 1999; Soni & Venkartaramanan, 2003). However, there is no study investigated the relationship

between ERP and organizational excellence, the current study is an attempt to examine this relationship. Therefore, the following hypothesis was proposed:

***Hypothesis 23 (H5): ERP has a positive and significant effect on the organizational Excellence.***

#### **3.4.6 Entrepreneurial Orientation (EO) and Organizational Excellence**

It has been argued by Knight (2000) that under globalization of organizational practices and operations, SMEs has effectively applied and used entrepreneurship and marketing strategies to develop business excellence and accomplish the best performance. Additionally, Ussahawanitchakit (2007) pointed out that organizations need to emphasize more in the dimensions of EO, i.e. innovativeness, proactiveness, risk-taking, competitive aggressiveness, and autonomy, by developing potential capabilities and strategies to increase business excellence, competitiveness, and competitive advantage.

Moreover, from their point of view Chen *et al.* (2007) wondered why some new venture excels, while others fail. They argued that the question lies in the very heart of entrepreneurship research. Additionally, they pointed out that the characteristics of EO contribute to excellent performance, and the interaction between EO and other organizational performance will have positive effects on organizational performance. Dahlgaard-Park and Dahlgaard (2010) reported that the organization's leaders should encourage their employees' creativity, learning, and enhance knowledge management to have organizational sustainable innovation excellence. Additionally, entrepreneurship is an antecedent of sustainable competitive advantages, and excellence (Kraus *et al.*, 2012).

From the previous above discussion, it is clear that EO has a relationship with organizational excellence. Based on that, the following hypothesis was proposed:

***Hypothesis 24 (H6): Entrepreneurial Orientation has a positive and significant effect on the organizational Excellence.***

### **3.4.7 Organizational Excellence and Organizational Performance**

Organizational excellence and organizational performance are the most important measurement indicators for the organization's success, achievement, competitiveness, advancement, and development. They are interrelated where every one of them lead to other, however implementing organizational excellence as a practice that involve innovation can lead to superior performance. According to EFQM, organizations that have performance of 60 percent or above are considered as excellence organizations. Antony and Bhattacharyya (2010) argued that existing models of excellence look at excellence as an outstanding level of performance. In the field of business performance, there is a basic question of how organizations can pursue business excellence and sustain and achieve competitive advantages (Dahlgard & Dahlgard-Park, 2006; Watson, 2003)

In relation to that, Harrington (2005) pointed out that organizational excellence is a holistic approach that improves organizational performance. Moreover, Ooncharoen and Ussahawanitchakit (2008) proved that organizational excellence has a significant association with business performance. In addition, Pinar and Girard (2008) in their empirical study of 200 Turkish firms, found a significant relationship between organizational excellence and organizational performance.

Based on the previous discussion, the following hypothesis was proposed:

***Hypothesis 25 (H7): Organizational Excellence has a positive and significant effect on the organizational performance.***

### **3.4.8 Entrepreneurial Orientation (EO) and Entrepreneurial Organizational Culture (EOC)**

Organizations sometimes encourage their employees to employee creativity but also sometimes managers shoot down them because of disagreement with the game that the organization in playing in specific time (Anthony, Eyring & Gibson, 2006). As a join between entrepreneurial organization and organizational culture, entrepreneurial organizational culture (EOC) is a prerequisite for corporate entrepreneurship which uncover by simple communication between people and a fertile ground for employees' entrepreneurial activities (Kuratko *et al.*, 2004; Morris *et al.*, 2008).

The significant relationship between entrepreneurial activity and culture and their affect on entrepreneurial behavior has been suggested by previous research (Kreiser *et al.*, 2010; Zahra *et al.*, 1999). Therefore, the literature of EO emphasized on the important role of entrepreneurial culture for organizational success (Lumpkin & Dess, 1996). The EOC could be viewed as a hero emerges in different times to take charge of entrepreneurial and innovative projects (Smircich, 1985). Therefore, EOC is considered as the entrepreneurial activity of organization's employees. According to Razavi (2012) the entrepreneurial activities and characteristics of employees are affected by culture. In addition, previous research described entrepreneurial organizational characteristics are more related to organizational culture research (Duobiene & Pundziene, 2007). In relation to that, Beugelsdijk (2007) argued that social characteristics by EOC can lead to high entrepreneurship levels. In his empirical study, he found the EOC is positively and significantly associated with regional innovativeness.

Most studies in the previous literature focus more on the relationship between cultures and organizational as a positive and significant relationship that lead to enhance organizational performance and increase competitive advantages (Paulin *et al.*, 1999; Trefry, 2006), however the entrepreneurial traits of the culture have been greatly neglected. In spite of the existing of some conceptual papers (Duobiene & Pundziene, 2007; Kuratko *et al.*, 2004; Morris *et al.*, 2008; Razavi, 2012) that addressed EOC, there is no study that examined the effect of EO on EOC and their joint effect on organizational performance. For this purpose the following hypothesis has been proposed:

***Hypothesis 26 (H8): EO has a positive and significant effect on the Entrepreneurial organizational Culture (EOC).***

#### **3.4.9 Entrepreneurial Organizational Culture (EOC) and Organizational Performance**

Organizational culture is defined as a system of beliefs, attitudes, and values shared by the employees of an organization (Martínez-López, 2009). To create an entrepreneurial organizational culture, employees need to be aware of vision and mission statements that will assist them to follow the entrepreneurial strategy as a part of the culture and not only new fashionable and luxury ideas (Stone, 2007). The role of culture and its effect on organizational performance has been examined in the previous literature (Kim *et al.*, 2004; Lee *et al.*, 2004; Ogbonna & Harris, 2000).

However, the effect of EOC on organizational performance was not studied as much as organizational culture in the previous literature, but it is expected to have more influence because it involves many characteristics that can contribute positively and significantly on organizational performance such as innovation, open communication, flexibility,

mutual trust, and other characteristics of entrepreneurship (Duobiene & Pundziene, 2007). Therefore, the following hypothesis was proposed:

***Hypothesis 27 (H9): EOC has a positive and significant effect on the organizational Performance.***

#### **3.4.10 Organizational Excellence as a mediator between TQM and Organizational Performance**

Organizational excellence has recently emerged to have the same meaning as business excellence with the exception that it may apply more in public sector organizations (McAdam, 2000). Excellence is the main goal of all modern organizations and can be considered as a consequence of innovative and creative strategy implementation, such as TQM, and its way for success on the competitive path (McAdam, Armstrong, & Kelly, 1998; Vora, 2002). Innovation is the main drive that shifts organizations from TQM to business excellence level (Mele & Colurcio, 2006).

In his contribution to the same field, Kanji (1998) concentrated on the measurement and individuated business excellence features while measuring stakeholders' satisfaction to obtain a comprehensive evaluation of the organizational performance. In addition, the goal of an organization is not only to have TQM in itself, but to adopt it as a managerial approach that it assists in the achievement of business excellence (McAdam *et al.*, 1998).

In general, excellence takes shape in several aspects when linked to TQM implementation such as: leadership and coherence with objectives, development of partnerships, orientation to customer and results, public responsibility, management in terms of facts and processes, and learning, innovation, and continuous improvement (Mele & Colurcio, 2006). They also argued that an organization achieves an excellent

position when it is capable of generating organizational performance and results of maximum value with respect to competitors.

Additionally, McAdam (2000) pointed out that organizational excellence is a key stage on the journey of TQM. Historically, the word excellence is still less clear until 1982 when Peters and Waterman published their book about it (Kanji & Sa, 2006). They argued that excellence became directly related to the levels of performance. Moreover, in their results in their literature review approach regarding the TQM implementation elements for manufacturing excellence, Sharma and Kodali (2008) developed a framework of TQM implementation elements for sustaining manufacturing excellence from comparative analysis of other models of TQM. In addition, they found that there are three categories of framework namely, an award based, researchers/academic-based, and consultant based.

In another study, Adebajo (2001) found that quality and business excellence complement each other. Most excellence models such as EFQM and MBNQA are based on the concept of TQM as a holistic approach, and some of quality model has been moved to excellence model such as EQA is now known as the EFQM excellence award (Adebajo, 2001).

In relation to the public sector, the contrast between TQM and Excellence is most evident where there were attempts to insert TQM concept in the public sector but there is no evidence that they had success (Cairncross, 2000).

From the above discussion we can conclude that TQM practices can help organizations to enhance organizational excellence (Hassan *et al.*, 2007; Lee, 2002). On the other hand, excellence models and practices based on TQM principles can achieve a high level of organizational performance (Ioncia & Baleanu, 2010). Therefore, the following hypothesis was proposed:

***Hypothesis 28 (H10): Organizational Excellence mediates the relationship between TQM and Organizational Performance.***

#### **3.4.11 Organizational Excellence as a mediator between ERP and Organizational Performance**

ERP systems help organization in integrating and automating corporate cross-functions such as procurement, inventory, distribution, project management and finance (Tarn *et al.*, 2002), and to improve business performance (Mabert, Soni, & Venkataramanan, 2000).

In the last few years, ERP has been extended to attain of the planning system to contain the entire organization, from marketing to development of products, and to accomplish total organizational excellence through integration (Mabert *et al.*, 2000). In addition, the legacy systems have a lack of integrating different functions of the organization, where the core system such as ERP require all components working together to acquire excellent performance (Tarn *et al.*, 2002). Moreover, Rao (2011) pointed out that using Six Sigma in conjunction with ERP relieves implementing the best business practices with the goal of accomplishing excellence in business processes.

According to Baron and Kenny (1986), the mediator construct is the mechanism that can explain the relationship between independent variable and dependent variable. That is,

the indirect effect through mediator is examined and compared to the direct effect. Due to the inconsistent results of the direct effect between ERP and organizational performance, the indirect effect through organizational excellence was examined. According to Attafar et al. (2012), organizational excellence is considered a practice that helps organizations to achieve excellence in their growth. Therefore, the demonstration of excellence in information technology is to generate the best results (Masli *et al.*, 2010). Due to the inconsistent results between ERP and organizational performance, organizational excellence can be the mechanism that can mediate their relationships.

Therefore, the following hypothesis was proposed to be tested:

***Hypothesis 29 (H11): Organizational Excellence mediates the relationship between ERP and Organizational Performance.***

#### **3.4.12 Organizational Excellence as a mediator between EO and Organizational Performance**

The impact of EO on organizational performance has been widely discussed and approved by the researchers. The question arises now how EO can enhance performance and what is the mechanism that explains this effect. Therefore, organizational excellence has come to answer this question. It is proposed in this study to mediate the relationship between EO and organizational excellence. Previously above, the relationship between EO and organizational excellence in one hand and the relationship between organizational excellence and organizational performance in the other hand have been hypothesized to have significant relationships due to the previous literature that approve that relationship. In addition, the indirect EO-organizational performance relationship is more prominent than the direct relationship (Lau & Zhang, 2006). In other words, the

relationship between EO and organizational performance is no straightforward; therefore it is affected by other elements (Vij & Bedi, 2012).

Lumpkin and Dess (1996) suggested other mediators between EO and organizational performance that may explain this relationship such as organizational activities. Harms (2013) reported that there are only 15 studies in Scopus that examined the mediating effect between EO-performance relationships. The results showed at least partial mediation which hints there is a need for a mediator that may act as a transmission of the mechanism to explain that relationship. Additionally, risk-taking and practiveness contribute to innovation which in turn enhance and increase organizational performance (Gunawan, Jacob, & Duysters, 2013). In relation to that, Arunachalam *et al.* (2013) mentioned that the previous researches show that EO affects innovation and in turn innovation impact organizational performance. Innovation is considered an important element of excellence that leads to enhance performance. Therefore, organizational excellence could play the mediating effect between EO and organizational performance, and explain that effect in a better way. As has been suggested by Lumpkin and Dess (1996), the relationship between EO and organizational performance may be intervened by organizational activities that can play a role of explaining their relationship. Organizational excellence as a management practice and activity, as defined by EFQM (1999) and Moullin (2007), can mediate the indirect effect between EO and organizational excellence. In addition, managers with strong EO can have excellent results and subsequently enhance the entire performance of the organization.

Therefore, the following hypothesis was proposed to be examined:

***Hypothesis 30 (H12): Organizational Excellence mediates the relationship between EO and Organizational Performance.***

### **3.4.13 Entrepreneurial Organizational Culture (EOC) as a mediator between Entrepreneurial Orientation (EO), and Organizational Performance**

Culture refers to the beliefs and values that shared by persons of a society where including patterns of feeling, reacting, behaving, and premises underlying behavior (Rao & Swaminathan, 1995). By joining organizational culture and entrepreneurial organization, we can talk about an organizational culture in which innovation, open communication, flexibility, mutual trust, and other lineaments of entrepreneurship are raised and identify it as an entrepreneurial organizational culture (EOC) (Duobiene & Pundziene, 2007).

Previous research has suggested the important relationship and link between entrepreneurial activity and culture (Kreiser *et al.*, 2010), and how culture affects entrepreneurial behavior (Zahra, Jennings, & Kuratko, 1999). The relationship between organizational culture and organizational performance has been abundantly examined (Lee *et al.*, 2004; Ogbonna & Harris, 2000). Moreover, many studies emphasized the role of organizational culture as a motivator for strong entrepreneurial orientation (Lee *et al.*, 2011). They also found while summarizing previous studies that the mediating and moderating impact of culture on EO has a significant effect on organizational performance. Additionally, other different environmental and organizational elements should be examined as mediating and moderating variables when investigating the EO-organizational performance relationship (Vij & Bedi, 2012). Furthermore, some researchers confirmed that EO can assist in developing of EOC that leads to organizational performance (Al-Swidi & Mahmood, 2011; Dess *et al.*, 1999).

Therefore, the following hypothesis was proposed to be tested:

***Hypothesis 31 (H13): Entrepreneurial Organizational Culture mediates the relationship between EO and Organizational Performance.***

### **3.5 Summary**

The literature that investigating the organizational performance is abundant, but how and what mechanism that will lead to this performance still needs more researching. This study produces some mechanism such as organizational excellence and entrepreneurial organizational culture. Based on a comprehensive review of literature of Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Excellence, and Entrepreneurial Organizational Culture (EOC), several conclusions can be summarized in the following:

First, there is a bulk research work in the literature of TQM to investigate the relationship between TQM practices and organizational performance. However, most of this work was done in developed countries such as the USA and Europe. In spite of the extensive research works that generated different theoretical frameworks for understanding the impact of TQM on organizational performance, little of these studies examined the effect of TQM on organizational performance of public sector organizations.

Second, there are many studies that examined the effect of ERP systems on organizational performance. Most of these studies argued that ERP systems can impact organizations negatively due to some critical success factors; however, there are other studies found that ERP is a very important factor for achieving performance. This inconsistency in the literature of the impact of ERP on organizational performance

imposes research to find more factors that can lead to successful implementation of ERP or lead to negative impact of organizational performance. Additionally, most of studies are more focusing on private organizations that implement ERP systems. Therefore, this study is one of those studies to examine ERP-Organizational performance relationship in public organizations.

Third, there has been a growing body of literature examining the EO and its impact on organizational performance, but there still some ambiguity in this relationship, especially in public sector organizations. In addition, there is little attention from researchers to examine this relationship in Middle East countries such as UAE where there is different and unique culture.

Fourth, little researches have been focused on organizational excellence and what is its relation to organizational performance. Many organizations wish to attain excellence that will lead to superior performance. This study came to investigate the role of organizational excellence as a mediator between TQM, EO, ERP, and organizational performance. The contradiction in the literature of the relationship between these variables can be explained in a better way if organizational excellence used as a practice to link between them.

Fifth, in the same way EOC plays an important role as a mediator between EO and organizational performance due to the inconsistency of this relationship. A comprehensive literature showed that this relationship could help organizations to achieve high performance in culture-driven countries such as the UAE. Thus, this study

contributed to the body of literature by examining the entrepreneurial culture effect on the EO - performance relationship.

Finally, the theoretical framework of this study was drawn based on the reviewed literature and hypotheses were developed to be tested in the next chapter.

## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

This chapter discusses the research methods used in this study. It discusses the research design, measures used in this study, population and sampling, the questionnaire design, and the data collection procedures. In addition, this chapter reports the pilot study results and proposed statistical techniques that are going to be used to analyze the data for the study.

#### **4.2 Research Design**

In research methodology there are different research designs that can be used and deployed in doing research. According to Zikmund (2003) there are four research methods for casual and descriptive research, they are: survey, experiment, secondary data, and observation. The survey method can deploy either a survey questionnaire or interview to collect data from respondents through mail, telephone, internet, or personal by self-administrated questionnaire. Experimental research design is used by the researcher to examine the impact of some variables on the phenomenon. It is more conducted in laboratory or in the field. Secondary data research design is a method used by the researcher to study the past or historical data they are related to some variables. Observational research design is a technique of collecting data by the researcher through his/her observations and not on the perceptions of the respondents. From the last

mentioned methods we can conclude that the research design is fully dependent on the research context and the research purpose (Zikmund, 2003).

However, the qualitative data collection method uses words as the people and situations, description of circumstances, quantitative data collection method in the numerical description that exactly reported (Cooper & Schindler, 2006). Thus quantitative research is a method of measuring variables through operational definitions (Cooper & Schindler, 2006).

Literature of social science research has identified four different major categories of research designs, they are: descriptive, correlational, experimental, and quasi experimental (Leary, 2004). According to Sekaran (2003), a correlational study is a study that investigates the relationship between various variables, when conducted in organizations, they are called field studies.

This study is considered as a correlational in nature due to the main purpose to provide a reliable and valid framework for the interaction between Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Performance (OP), Organizational Excellence (OE), and Entrepreneurial Organizational Culture (EOC) of Dubai Police in United Arab Emirates.

A survey questionnaire research design method is employed in this study because it is the most appropriate way to collect primary data to obtain beliefs, personal and social facts, and attitude. Therefore, this study employed a survey questionnaire research design to gather data concerning the hypothesized relationships and can be categorized as a field

with correlational research design or quantitative orientation (Kerlinger & Lee, 2000). Accordingly, to achieve the objectives of this research, a quantitative survey questionnaire research approach will be conducted through self-administrated questionnaire to measure the relationships between variables under investigation. In addition, rather than a longitudinal study, cross-sectional study was suitable to be utilized in this study for the reason for time limitation. In relation to that, many studies (Miller, Sumner, & Deane, 2009; Salaheldin, 2009) of the relationship between TQM and organizational performance in service sector have used descriptive cross-sectional design.

#### **4.3 Population and Sampling**

Dubai Police (DP) consists of thirty main departments and police stations. In these departments and police stations there are 767 sections that are more concern of all every day duties. Each one of these sections has a head section officer who is responsible for a group of employees doing similar jobs. From this standpoint, officers who are in charge of these sections play a mediating role between employees and managers, therefore, all strategies and issues regarding management, quality, and systems are under their responsibility. In addition, they know the implementation stages of ERP system in DP whether there are successes or problems in the system. Moreover, the role of head sections is to create an entrepreneurial culture among employees in the organization to enhance more effectiveness and performance. Accordingly, the population of this study is the police sections in all Dubai Police departments and police stations. All together the number is 767 sections and the respondents for this study are the head section officers.

### 4.3.1 Sampling Frame

For the purpose of the present study's pilot study, the proposed sample will be 111 sections with the balance of 656 sections considered as the sampling frame for the actual study. The sampling frame will be developed through different resources such as the Human Resource Department, ERP system, or official website of Dubai Police. Therefore, the below table (Table 4.1) lists the number of Head Sections in all Dubai Police Departments and Police Stations.

Table 4.1  
*Numbers of Head Sections in General Department and Police Stations*

<b>Department /Police Station</b>	<b>No. of Sections</b>
General Department of Administrative Affairs	14
General Department of Airport Security	47
General Department of Criminal Investigation	93
General Department of Punitive and Correctional Establishments	37
General Department of Traffic	39
General Department of Anti Narcotic	29
General Department of Operation	56
General Department of Organizations Protective Security and Emergency	36
General Department of Human Rights in Dubai Police	27
General Department of Finance	16
General Department of Human Resources	32
General Department of Community Services	37
General Department of Services and Supplies	48
General Department of E-Services	20
General Department of Total Quality Management	17
General Department of Forensic Science and Criminology	33
General Department of Training	15
Dubai Police Academy	59
Decision Making Support Center	19
HQ's Regulatory Office	23
Police Stations (10 Stations)	70
<b>Total</b>	<b>767</b>

### 4.3.2 Sampling Techniques

This study will use a random sample of the sections of DP. According to Creswell (2003), each individual in the population in the selecting of a random sample has an equal probability of being selected. Therefore, each element in the list of population has the same chance of being chosen (Sekaran, 2005). McMillan and Schumacher (2001) pointed out that the sample size should be sufficient for the researcher and large enough with approximate the characteristics of the population satisfactory to provide a credible result. In another point of view, Leedy and Ormrod (2005) reported that the sample should be around 30% of the population size should be acceptable and adequate. Additionally, the sample size larger than 30 and less than 500 are appropriate, and the sample size should be several times (10 times or more) as large as the number of variables used in the study (Sekaran, 2000). For the purpose of using SEM, a minimum sample size of 100 is enough (Medsker, Williams, & Holahan, 1994). In addition, Hair, Anderson, Tatham, and Black (1998) reported that the general rule for SEM for every parameter estimated is 5-20 observations are needed. The subject of this study will be selected by using Excel to generate a random subject of the sample (Kervin, 1992; Sekaran, 2005).

According to Hair *et al.* (2010), every parameter estimated needs 5-20 observation. In other words, at least 5 times of the number of questions and observations. Therefore, for the purpose of this study, the sample size will be estimated according to the number of questions in the questionnaire as follows:

$$113 \text{ (number of questions)} * 5 = 565 \text{ questionnaires}$$

Table 4.2 below shows the random sampling based on proportionate sampling. It shows the number of proposed sample in each department and its percentage. Proportionate sampling strategy is a method used for gathering participants for a study. It is used when the population is formed from many subgroups that are different in their numbers. Therefore, the number of sample from each subgroup is determined by the number of their relative population. In Dubai Police there are many departments and police stations that are different in number of sections. Thus, the number of sample was calculated based on the number of population in each of them. To get the number of sample from each department, the number of (565) divided by number of population (767) by the number of sections in each department or police station.

Table 4.2  
*The Random Sampling*

<b>Department /Police Station</b>	<b>No. of Sections</b>	<b>Percentage</b>	<b>Proposed Sample</b>
General Department of Administrative Affairs	14	2%	10
General Department of Airport Security	47	6%	35
General Department of Criminal Investigation	93	12%	69
General Department of Punitive and Correctional Establishments	37	5%	27
General Department of Traffic	39	5%	29
General Department of Anti Narcotic	29	4%	21
General Department of Operation	56	7%	41
General Department of Organizations Protective Security and Emergency	36	5%	27
General Department of Human Rights in Dubai Police	27	4%	20
General Department of Finance	16	2%	12
General Department of Human Resources	32	4%	24
General Department of Community Services	37	5%	27
General Department of Services and Supplies	48	6%	35
General Department of E-Services	20	3%	15
General Department of Total Quality Management	17	2%	13
General Department of Forensic Science and Criminology	33	4%	24

Table 4.2 (Continued)

<b>Department /Police Station</b>	<b>No. of Sections</b>	<b>Percentage</b>	<b>Proposed Sample</b>
General Department of Training	15	2%	11
Dubai Police Academy	59	8%	43
Decision Making Support Center	19	2%	14
HQ's Regulatory Office	23	3%	17
Police Stations (10 Stations)	70	9%	51
<b>Total</b>	<b>767</b>	<b>100%</b>	<b>565</b>

#### 4.4 Unit of Analysis

A unit of analysis is who or what that is being studied in a research. In the social science research, a unit of analysis is an individual, an organization, a social interaction or a group of individual/organization. This study aims to examine the hypothesized relationships on the strategic business unit level. Therefore the unit of analysis of this study is the section in Dubai Police represented by the head section officers. Hepworth (1998) pointed out that establishing new management initiatives provide advantages for the wide organizational level and to all management tools. Most of previous studies related to TQM and EO were conducted at the organizational level. Therefore this study seeks to contribute to the insufficient knowledge of TQM, ERP, and EO at managerial level. In addition to that, business unit has been considered by many researchers when studying strategies such as TQM practices (Saraph *et al.*, 1989), TQM strategy (Reed, Lemak, & Montgomery, 1996), and market orientation (Dwairi, Bhuain, & Jukus, 2007). Therefore, the sections in DP are considered as the strategic business units where the competitive advantage originated and created through the strategy implementation. Dubai Police is considered as a big organization; therefore selection DP as a study sample is

consistent with previous studies' approach (Antony, Leung, Knowles, & Gosh, 2002). In other words, bigger public organizations such as DP have most current policies and a bigger sample size.

Furthermore, the sample for this study is planned to be 565 sections in Dubai Police. The head section officers are seen as the most suitable respondents in this study because they are responsible for setting up goals and implementing strategies and programs in their sections. In addition, head section officers as a middle management are the key player as creators, monitors, and updaters of the performance measures (Kumar, *et al.*, 2009). Therefore, they have more knowledge about the activities than other employees and managers. In other words, implementing, practicing, evaluation, and following up practices and programs such as TQM and ERP are their daily job. Their position as a link between managers and employees enable them to have more knowledge about what is going on in their sections. In brief, the middle level managers have the sufficient qualifications and experiences and aware of practices such as TQM and ERP in their respective organization (Talib, 2013). To this end, they are in a position to answer all the questions of the questionnaire.

#### **4.5 Measurement of Variables and Instrumentation**

Regardless of demographic factors, all variables in this study were measured using multiple items used in previous research. However, phrasing of items was modified to match the local setting and sample.

The dependent variable in this study is organizational performance, while the mediating variables are organizational excellence and entrepreneurial organizational culture, and the independent variables are total quality management, enterprise resource planning, and entrepreneurial orientation.

The Likert scale measure is widely used in social science and one of the most commonly measure to examine the impact of TQM practices, EO on the organizational performance (Al-Marri *et al.*, 2007). There are different measurement scales in Likert such as a five-point and a seven-point Likert scale that will be chosen according to the previous research. Despite some literatures argued about the benefits inherent in 5-point Likert Scale but still a 7-point Likert Scale is said to produce detailed feedback and not subjecting the respondents of the survey into an undue cognitive burden (Cavana *et al.*, 2001; Hair *et al.*, 2010). Thus, in order to achieve a better optimal result in scale reliability and information processing, 7-point Likert scale is argued to be efficient (Churchill & Peter, 1984). In addition, for the purpose of statistical conclusion validity, the scales used in this study were designed to be rated by 5 Likert-point and 7 Likert-point scale. The multiple scales and reversed items in the questionnaire can help to avoid common method bias (Crampton & Wagner, 1994). Therefore, the following explains how each variable is measured.

#### **4.5.1 Organizational Performance Scales**

The measure of organizational performance is based on a balanced scorecard measurement. A balanced scorecard (BSC) was developed in 1992 by Kaplan and Norton. It was primarily created as learning system and communication-information

within enterprises (Welter, Vossen, Richert, & Isenhardt, 2010). According to the core indices of the four BSC's perspectives that proposed by Kaplan and Norton (1992; 2000), 15 evaluation indicators for BSC questionnaire are concluded in this study. In addition, BSC has four perspectives, namely: financial perspective, customer perspective, internal process perspective, and learning and growth perspective, and a five-point Likert scale ranging from "1" (Strongly disagree) to "5" (strongly agree) for Organizational Performance.

Table 4.3 Exhibited the items used to measure organizational performance of Dubai Police and their sources from which they were adapted.

Table 4.3  
*Organizational Performance Scale*

<b>Code</b>	<b>Item</b>
<b>Financial</b>	
<b>OP1</b>	Our department has a good budget management
<b>OP2</b>	Operation in our department is not cost saving
<b>OP3</b>	Our department reduced unit cost of service delivered
<b>Customer</b>	
<b>OP4</b>	Our department has highly community demand
<b>OP5</b>	Our department increased on customer satisfaction
<b>OP6</b>	Our department improved on timeliness of service delivered
<b>OP7</b>	Our department maintains good reputation among customers
<b>Internal Process</b>	
<b>OP8</b>	Our department maintains the high level of motivation amongst employees
<b>OP9</b>	Our department successful in implementing employee development programs (training)
<b>Op10</b>	Our department maintains a high level of employee health and safety
<b>OP11</b>	Our department has a work climate support of obtaining department's objectives

Table 4.3 (Continued)

<b>Learning and Growth</b>	
<b>OP12</b>	Our department has successfully identified the emerging needs of customers/outside communities
<b>OP13</b>	Our department is responding quickly to the changing customer demands
<b>OP14</b>	Our department utilizes latest technology for increasing effectiveness
<b>OP15</b>	Our department has successfully developed the procedure to improve the quality of service offered

#### **4.5.2 TQM Practices Measure**

As discussed in chapter three that there are some critical factors of TQM that can affect its successfulness. During the analysis of TQM's CSFs, it is found that many writers have tried to identify the different dimensions that form TQM, including Anderson and Sohal (1999), Brah, Tee, & Rao (2002), Brah, Wong, & Rao (2000), Christos Fotopoulos & Evangelos Psomas (2009), Dewhurst, Matinez-Lorente, & Dale (1999), Rao (2006), Terziovski & Samson (1999), Yahaya Yusuf, Angappa Gunasekaran, and Guo Dan (2007), and others (see Tables in Appendix no. 4). When analysis these dimensions, there are some commonalities among them such as leadership, strategic planning, and continuous improvement. From these works by many researchers, seven dimensions have been selected namely Management Leadership, Strategic Planning, Human Resource Management, Service Design, Information and Analysis, Continuous Improvement, and Benchmarking to measure the effectiveness of TQM practices on organizational performance in public sector organizations.

In order to achieve the objectives of this study, a seven-point Likert scale ranging from "1" (Strongly disagree) to "7" (strongly agree) for TQM. There are different measurements used to measure TQM constructs. Brah *et al.* (2000) studied TQM and its

relationship with performance in the service sector in Singapore using 176 samples. This study uses the measurement of Brah *et al.* (2000) because it is more suitable for the context of this study as service organizations in one of the developing countries, whereas other rigorous studies were in developed countries or in private and manufacturing sectors (Boyne & Walker, 2002). Brah *et al.* (2000) measurements will be used for measuring leadership, HRM, service design, and benchmarking constructs. Notably, the coefficient alphas for all constructs should be above the 0.70 cutoff criterion as suggested by Kaiser (1974), for example of Brah *et al.* (2000) that achieved a cronbach alpha of 0.8981 in leadership, 0.8609 in HRM, 0.8672 in service design, and 0.7153 in benchmarking.

Strategic planning construct is adapted from measured developed by Samson and Terziovski (1999). Their model has been used in the largest empirical study of 1200 Australian and New Zealand firms based on Baldrige Award and therefore ensure its validity, and as argued by Samson and Terziovski that their scale constitutes the criteria of the Malcolm Baldrige National Quality Award (MBNQA) that is accepted by many scholars such as Hair *et al.* (1995) and Juran (1995) (Prajogo & Sohal, 2006). Information and analysis construct has been adapted from measurement used by Anderson and Sohal (1999). In their study, Information and analysis tried to clarify how the business determines the data collected, analyzed, and used for efficient and effective work for increasing improvements. Their questionnaire based on the Australian Quality Awards Framework (AQA). Continuous improvement construct has been adapted from measurement used by Rao (2006) as presented below. Table 5.3 exhibited the items used

to measure TQM practices of Dubai Police and their sources from which they were adapted.

Table 4.4  
*Total Quality Management Practices Scale*

<b>Code</b>	<b>Item</b>
<b>Management Leadership</b>	
<b>ML1</b>	In our department, the top management has long-term quality plans.
<b>ML2</b>	In our department, the top management has set up clear quality goals.
<b>ML3</b>	In our regular meeting, the top management always emphasizes the importance of service quality delivered to our customers.
<b>ML4</b>	In our department, the top management encourages us to view service quality as being more important than cost.
<b>Strategic Planning</b>	
<b>SP1</b>	In our department, we have a mission statement which has been effectively communicated to all the employees and gained their support.
<b>SP2</b>	In our department, we have comprehensive planning process which sets and reviews short and long-term goals.
<b>SP3</b>	Our plans focus on the achievement of the best practice in the other police departments.
<b>SP4</b>	When we develop our plans, policies, and objectives, we always incorporate customer requirements and the needs of all stakeholders, including the community.
<b>Human Resource Management</b>	
<b>HRI1</b>	In our department, all employees' suggestions are evaluated.
<b>HRI2</b>	In our department, we often work in teams, with members from a variety of departments.
<b>HRI3</b>	In our department, we use the ability to work in teams as a criterion in employees' selection.
<b>HRT1</b>	In our department, employees' training is provided in quality principles.
<b>HRT2</b>	In our department, resources are available for employees training.
<b>HRT3</b>	In our department, the top management is often involved in quality training.
<b>HRE1</b>	In our department, employees are encouraged to take initiatives when dealing with customers' complaints.
<b>HRE2</b>	In our department, problem solving ability is a criterion for selecting employees.
<b>HRE3</b>	In our department, employees are given the resources necessary to deal with customers' complaints.
<b>Service Design</b>	
<b>SD1</b>	It is the policy in our department to thoroughly review the new service designs before its marketing.
<b>SD2</b>	In our department, the quality of new service is more important than reducing the cost.
<b>SD3</b>	When designing new service, employees from different departments often participate in the process.

Table 4.4 (Continued)

Code	Item
<b>Information and Analysis</b>	
<b>IA1</b>	In our department, we have a program to reduce the time between receiving an order and its satisfaction.
<b>IA2</b>	In our department, performance data is collected and analyzed in regular basis.
<b>IA3</b>	In our department, information allows us to control and improve core processes and services.
<b>IA4</b>	In our department, we receive timely information and the important data is presented and communicated to employees in regular basis.
<b>IA5</b>	In our department, information systems are always evaluated and improved.
<b>Continuous Improvement</b>	
<b>CI1</b>	In our department, there is always an emphasis on the continuous improvement in all the activities at various levels.
<b>CI2</b>	In our department, continuous improvement is emphasized in the training programs provided to employees.
<b>CI3</b>	In our department's policies, improving the quality is more important than the quantity and short term goals.
<b>CI4</b>	In our department, all departments and stations believe that by implementing continuous improvement strategies, they can survive and serve better in the highly competitive environment.
<b>Benchmarking</b>	
<b>B1</b>	In our department, it is always emphasized that benchmarking is our strategy to achieve a better competitive position
<b>B2</b>	We visit other police departments, locally and internationally, to investigate their practices.
<b>B3</b>	In our department, we conduct research to find out the best practices of other local and international polices.

### 4.5.3 ERP Measure

While reviewing the literature, ERP competence as a portfolio of organizational, managerial and technical skills and expertise hypothesized to improve business performance after an ERP system is functionally and operational stable (Stratman & Roth, 2002). They introduced a rigorous development by testing constructs that relate to ERP competence that consists of eight scales including the managerial elements (executive commitment and strategic IT planning), organizational elements (learning, ERP training, business process skills, and change readiness), and the technical elements (IT skills and project management) (Zivic, Shea, & Fuller, 2011). Additionally, the development of their scale measurement based on two-stage approach. In the first stage, a

precise definitions and measurement items for every construct with tentative indications of validity and reliability. In stage two, further refinement and validation through survey data collected on the scales developed in the previous stage (Zivic, Shea, & Fuller, 2011). Moreover, they pointed out that the “financial readiness” construct is not covered Stratment-Roth competence scale. According to Matende and Ogao (2013) the failure of ERP system based on the previous literature on can classified to technical, organizational/human, and economic. Therefore, this measurement is more suitable for this study for a public organization. Furthermore, a seven-point Likert scale ranging from “1” (disagree) to “7” (agree) used for ERP constructs.

Table 4.5 Exhibited the items used to measure ERP of Dubai Police and their sources from which they were adapted.

Table 4.5  
*Enterprise Resource Planning Scale*

Code	Item
<b>Strategic IT Planning</b>	
<b>ERPS1</b>	We constantly review our IT capabilities against strategic goals.
<b>ERPS2</b>	Strategic IT planning is a continuous process.
<b>ERPS3</b>	Written guidelines exist to structure strategic IT planning in our organization.
<b>ERPS4</b>	Top management is involved in strategic IT planning.
<b>ERPS5</b>	Strategic IT planning includes inputs from all functional areas.
<b>Executive Commitment</b>	
<b>ERPE1</b>	Functional managers willingly assign resources to the ERP project as they are needed.
<b>ERPE2</b>	The need for long-term ERP support resources is recognized by management.
<b>ERPE3</b>	Executive management is enthusiastic about the possibilities of ERP.

Table 4.5 (Continued)

<b>Code</b>	<b>Item</b>
<b>ERPE4</b>	Executives have invested the time needed to understand how ERP will benefit the enterprise.
<b>ERPE5</b>	All levels of management support the overall goals of the ERP Entity.
<b>Project Management</b>	
<b>ERPP1</b>	The tasks to be performed during the ERP project are clearly defined.
<b>ERPP2</b>	The responsibilities of project team members are clearly defined.
<b>ERPP3</b>	Measurements are used to determine the status of project tasks.
<b>ERPP4</b>	Project tasks are reviewed on a periodic basis.
<b>ERPP5</b>	The ERP project leader is experienced in project management.
<b>IT Skills</b>	
<b>ERPI1</b>	The internal IT staff have the ability to conduct routine ERP system maintenance.
<b>ERPI2</b>	The database administrator our department is an expert in the ERP database management system.
<b>ERPI3</b>	The IT staff are able to efficiently implement ERP system upgrades.
<b>ERPI4</b>	The IT staff have the technical ability to conduct a formal validation of all system changes.
<b>ERPI5</b>	IT staff offer ideas on how IT can be used to achieve business goals.
<b>Business Process Skills</b>	
<b>ERP B1</b>	There is a high level of business process knowledge within the ERP Entity.
<b>ERP B2</b>	Our employees understand how their actions impact the operations of other functional areas.
<b>ERP B3</b>	The operational processes of the ERP Entity are formally documented.
<b>ERP B4</b>	Functional managers are able to document cross-functional business process flows.
<b>ERP B5</b>	Managers are skilled at analyzing business processes for customer benefits.
<b>ERP Training</b>	
<b>ERPT1</b>	A formal training program has been developed to meet the requirements of ERP system users.
<b>ERPT2</b>	Training materials have been customized for each specific job.
<b>ERPT3</b>	Employees are tracked to ensure that they have received the appropriate ERP system training.
<b>ERPT4</b>	All users have been trained in basic ERP system skills.
<b>ERPT5</b>	ERP system training review sessions are scheduled.
<b>Learning</b>	

Table 4.5 (Continued)

<b>Code</b>	<b>Item</b>
<b>ERPL1</b>	We keep track of ERP developments related to our industry.
<b>ERPL2</b>	Cross-functional groups meet regularly to discuss new uses for the ERP system.
<b>ERPL3</b>	ERP improvement suggestions are regularly collected from multiple employee levels.
<b>ERPL4</b>	Business experiments are conducted to evaluate potential improvements in the way we use ERP.
<b>ERPL5</b>	External ERP experts are invited to suggest better ways to use the ERP system.
<b>Change Readiness</b>	
<b>ERPC1</b>	Employees have input into how their jobs will change with new ERP business processes.
<b>ERPC2</b>	Management actively works to alleviate employee concerns about ERP.
<b>ERPC3</b>	The change readiness of employees impacted by the ERP system is regularly assessed.
<b>ERPC4</b>	Employees are prepared for a series of ERP-related changes as the system evolves.
<b>ERPC5</b>	ERP-focused changes to the employee reward system have been communicated.

#### 4.5.4 Entrepreneurial Orientation (EO) Measure

The first scale developed to measure the entrepreneurial orientation (EO) was introduced by Khandwalla (1977). Later, Miller and Friesen (1983) followed him by introducing the five-point scale. Accordingly, other researchers developed these measures such as Smart and Conant (1994) and Covin and Slevin (1986). Therefore, drawing on Covin and Slevin (1989), Khandwalla (1976, 1977), Miller (1986), and Miller and Friesen (1982), a nine items scale are developed for EO. They are the most widely measurements utilized of EO in strategic management literature and entrepreneurship such as Atuahene-Gima & Ko (2001), Covin *et al.* (2006), and Tan & Litschert (1994).

In measuring the EO, most of the research on EO is considered only three dimensions namely, innovativeness, proactiveness, and risk-taking (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Zahra & Covin, 1995). In addition, the examination of the EO multidimensional variable can add more practical and theoretical understandings instead of using it a unidimensional construct (Wang & Yen, 2012). Moreover, following most of previous researches, EO represents a second-order reflective variable in the model. This study employed measures used by Covin and Slevin (1989). A five-point Likert scale ranging from “1” (Strongly disagree) to “5” (strongly agree) was used for that purpose.

Table 4.6 presents the items used to measure EO of Dubai Police and their sources from which they were adapted.

Table 4.6  
*Entrepreneurial Orientation Scale*

Code	Item
<b>Innovativeness</b>	
<b>EOI1</b>	It is the culture of our department to emphasize innovation and research and development activities
<b>EOI2</b>	Our department introduces new services and service at a high scale
<b>EOI3</b>	Our department supports bold approaches to innovative service development
<b>Proactiveness</b>	
<b>EOP1</b>	Employees in our department are encouraged to take initiatives and proactive moves
<b>EOP2</b>	Our department is usually the first government agency introduce new technologies and services
<b>EOP3</b>	Our department has a strong competitive posture toward competitors regionally and globally.
<b>Risk-taking</b>	
<b>EOR1</b>	Our department has a strong proclivity for excellent services
<b>EOR2</b>	The environment faced by our department requires boldness to achieve objectives
<b>EOR3</b>	Our department usually adopts an aggressive, bold posture when faced with risk

#### 4.5.5 Organizational Excellence Measure

According to some researches, organizational excellence has different constructs such as a work group, accommodations, organizational features, information, and personal (UTPA, 2003). Based on the three key organizational excellence factors for high performance presented by Darling and Nurmi (1995), Pinar and Girard (2008) used organizational excellence as independent variables with three constructs, namely: customer focus, constant innovation, and committed people. For the purpose of this study which is planning to examine the mediating role of organizational excellence between TQM, ERP, EO and organizational performance, some suitable items were adopted. In other words, the items were adapted from Pinar and Girard (2008) covered all the dimensions of the original measure. Additionally, the study conducted by Pinar and Girard (2000) was focusing on developing countries (Turkish firms), therefore it is more suitable for the context of this study. They used a seven-point Likert scale ranging from “1” (Strongly disagree) to “7” (strongly agree).

Table 4.7 presents the items used to measure organizational excellence of Dubai Police.

Table 4.7  
*Organizational Excellence Scale*

Code	Item
<b>Customer Focus</b>	
<b>EXC1</b>	Taking care of customers is our department’s top priority
<b>EXC2</b>	Our department develops services with customers in mind
<b>EXC3</b>	Listening to our customers is very important to us
<b>Innovation</b>	
<b>EXI1</b>	Our department encourages employee innovation
<b>EXI2</b>	Our department always provides new service ideas
<b>EXI3</b>	Our department believes in experimenting with new ideas

Table 4.7 (Continued)

Code	Item
<b>Personnel Commitment</b>	
<b>EXP1</b>	Our department has very good relations with employees
<b>EXP2</b>	Our department believes employees are very important
<b>EXP3</b>	Our employees are very committed to Our department
<b>EXP4</b>	Our employees are the company's most valuable asset

#### 4.5.6 Entrepreneurial Organizational Culture (EOC) Measure

Organizational culture encourages organizations' employees to understand the available business opportunities and to take advantage to have a high level of customer satisfaction and loyalty (Al-Swidi & Jusoh, 2012). Therefore, without entrepreneurial culture, organizations will face difficulties to satisfy their customers' demands. In addition, entrepreneurial orientation can assist in the advancement of entrepreneurial organizational culture that drives to the enhancement of organizational performance (Al-Swidi & Mahmood, 2011; Dess *et al.*, 1999). For the purpose of examining the mediating effect of the entrepreneurial organizational culture between EO and organizational performance, some suitable items were adapted from Denison (2000). In addition, a five-point Likert scale ranging from "1" (Strongly disagree) to "5" (strongly agree) for EOC.

Table 4.8 presents the items used to measure EO of Dubai Police and their sources from which they were adapted.

Table 4.8  
*Entrepreneurial Organizational Culture Scale*

Code	Item
<b>EOC1</b>	In our department, we respond to the business environment.
<b>EOC2</b>	All sections in our department are committed to create the required change.

Table 4.8 (Continued)

Code	Item
EOC3	In our department, customers' input directly influences our decisions.
EOC4	In our department, we view failure as an opportunity for learning and improvement.
EOC5	In our department, innovative ideas and risk taking initiatives are encouraged and rewarded.
EOC6	Our vision creates excitement and motivation for our employees.
EOC7	Our department invests generously in advanced technology to enhance our performance.

#### 4.6 Questionnaire Design

Questionnaire design is a very important stage for researchers as it has two main objectives. The first objective is that questionnaire design help to capture the numbers of targeted respondents. The second objective is to help in reducing and avoiding possible measurement errors (Clark, 1989). In addition, the development and questionnaire design are the most challenging tasks in survey design (Beins, 2009). Therefore, there are two significant issues in this stage namely questionnaire presentation and content. The content of the questionnaire should consistently be aligned with the questions and objectives of the study, and supported by experts' rigorous discussion and literature review. In addition to the content of the questionnaire, its presentation and format is also important. Therefore, an effective questionnaire format is reflecting on the issues of the question sequence, the response selection, and the question's wording (Synodinos, 2003). In the present study, series of focus group discussion was carried out with academicians and experts in the field of quality management and ERP system to check on the content validity of this study. In addition to the focus groups, the questionnaire was revised by three academicians and the researcher's supervisors to ensure the content validity and

wording. Moreover, three managers in Dubai Police were requested to fill the questionnaire for the purpose of testing the Arabic version. Some comments have come and considered. Moreover, other PhD colleagues also participated in revising the questionnaire before collecting the real data.

Furthermore, the response choice of questions may be designed as close-ended or open-ended formatted questions. In this study, closed-ended format has been employed for the suitability for this study and the nature of the questions. It has many advantages such as enabling quicker response from respondents and the researcher can easily coding information for data analysis in the later stage (Benis, 2009; Sekaran, 2006). Moreover, the questionnaire was presented to three officers in the Dubai Police to ensure that the questions are well understood.

Furthermore, the language of the questionnaire was originally in English, but since all the respondents are officers in Dubai Police in the United Arab Emirates, the questionnaire was translated to the respondents' language which is the Arabic language. According to the recommendation of Brislin (1970, 1986), the questionnaire was translated back into English to measure reliability and validity. This translation is made by two bilingual persons without informing them about the objective of the study. In addition to that, two other individuals were requested to translate back the Arabic version into English without accessing the original version. At the end, the two English versions were compared carefully to detect the modifications and changes.

From the questionnaire structure point of view, the questionnaire consisted of 113 Questions divided into seven sections. In the first section, there were fifteen questions to

measure Organizational Performance of Dubai Police. The second section, there were ten questions to measure Organizational Excellence constructs. The third section has thirty two questions to measure the seven constructs of TQM in Dubai Police. While in the fourth section contained forty questions that measure the ERP constructs in Dubai Police and the fifth section consisted of nine questions to measure the three constructs of EO. Additionally, in section sixth there were seven questions that were developed from Denison (2000) to measure the perceptions of Dubai Police officers related to entrepreneurial organizational culture. The last section contained the demographic information of the respondents.

#### **4.7 Proposed Data Collection Procedures**

There are many methods to collect data via surveys. In this study, primary data were randomly collected through questionnaire design among Dubai Police head section officers. The effective administration of questionnaire significantly impacts the level of satisfactory responses from respondents (Dillman, 1978). Therefore, self-administrated questionnaire was employed in this study. According to Cooper and Schindler (2006) indicated that the quantitative research way was very helpful in translating data collected using questionnaire survey or instrument for measurement into significant results that were beneficial for development of the research. As mentioned before that this study's questionnaire contained 113 questions and the self-administration approach will be followed by the researcher to collect data from the targeted respondents in Dubai Police. The researcher by himself is going to distribute the questionnaires to the respondents either in departments or police stations through emails or by hand as a hard copy, and

later collected the filled out questionnaires from respondents. Additionally, the researcher got in advance the official permission from the Dubai Police Head Quarter to conduct this study in Dubai Police and gave its instructions to all departments to facilitate the data collection processes.

A total of 565 questionnaires are going to be distributed. It is expected that the response rate is going to be high since the questionnaires are going to be officially channeled through the HR department in the DP Head Quarter.

#### **4.8 Pilot Study**

Before distributing the last version of the questionnaire to collect the real data of the study, pre-test evaluation to validate the instruments was conducted through a pilot study. Pretesting was conducted prior to the pilot study, the questionnaire was thoroughly examined and evaluated by three sections heads to ensure that the items used were well-worded and correctly understood.

The pilot study test is important for testing the reliability and validity of the measure (Sproill, 2004). In addition, it involves respondents from the same pool of the study from which the actual data were collected (Bradburn, Sudman, & Wansink, 2004).

The collected data for the pilot study was from 111 officers in selected departments, such Service and Supply Department, E-Service Department, and Al-Rashidya Police Station. In addition, the respondents were asked to comment if they have any difficulties in understanding the questions while answering the questions and to eliminate the misunderstanding and confusion related to the questionnaire items

According to Hair *et al.* (2010) the main criteria for selecting previous instrument is the internal consistency that gained through calculation of Cronbach's Alpha reliability coefficients.

#### **4.9 Measuring of the Reliability and Validity**

According to Hair *et al.* (2010) reliability is an estimation of the consistency level among multiple measurements of a construct. Therefore, the reliability analysis was conducted in this study to measure the consistency of items of constructs. According to Sekaran (2003), there are four methods commonly used by many researchers to measure the reliability of constructs, namely, test-retest methods, split half method, alternative form methods, and Cronbach's alpha coefficient method which is commonly used.

It has been argued by Davis (2000) that the first three methods have been criticized due to their practical weaknesses. However, on the other hand, Cronbach's alpha method overcomes those weaknesses of other methods. The Cronbach's alpha method to measure reliability has been the dominant method of testing reliability, particularly in among social science researchers.

Therefore, this study will follow the mainstream of social science research of using the Cronbach's alpha method to assess the reliability measures for each construct separately. According to Nunnally (1978) the minimum standards for Cronbach's alpha is 0.7 for exploratory research. As presented in Table 4.9, we can notice that the Cronbach's alpha coefficients for all constructs at the acceptable level of consistency. Most of the tabulated values of the alpha coefficient above are the agreed level for alpha (0.70) according to

Nunnally and Beinetin (1994). In addition, it was argued by Hair *et al.* (2010) that the minimum acceptable level of Cronbach's alpha is 0.60 for any construct to measure reliability. Therefore, however Financial is lower than 0.70 but it still acceptable for exploratory research (Hair *et al.*, 2010).

Table 4.9

*Reliability Analysis of Pilot Study*

Constructs	No. of original items	Cronbach's Alpha	Item deleted*	Cronbach's Alpha if item deleted
Financial	3	0.668	Nil	0.668
Customer	4	0.796	Nil	0.796
Internal Process	4	0.817	Nil	0.817
Learning & Growth	4	0.785	Nil	0.785
Customer focus	3	0.939	Nil	0.939
Innovation	3	0.881	Nil	0.881
Management Leadership	4	0.925	Nil	0.925
Strategic Planning	4	0.863	Nil	0.863
Human Resource Management	9	0.942	Nil	0.942
Service Design	3	0.873	Nil	0.873
Information and Analysis	5	0.906	Nil	0.906
Continuous Improvement	4	0.911	Nil	0.911
Benchmarking	3	0.897	Nil	0.897
Executive Commitment	5	0.917	Nil	0.917
Project Management	5	0.901	Nil	0.901
IT Skills	5	0.915	Nil	0.915
Business Process Skills	5	0.906	Nil	0.906
ERP Training	5	0.871	Nil	0.871
Learning	5	0.879	Nil	0.879
Change Readiness	5	0.934	Nil	0.934
Innovativeness	3	0.800	Nil	0.800
Proactiveness	2	0.469	EOP1	0.723
Risk Taking	3	0.794	Nil	0.794
Organizational Culture	7	0.847	Nil	0.847

\*Number of item as sequenced in questionnaire

According to Sekaran (2003), the measurement can indicate a good level of reliability but shortage in validity; therefore, the reliability can be a pre-requisite for measurement but not offer the goodness of the measurement. According to Nunnally and Bernetein (1994), validity indicates to what extent the measurement scales what proposed to be measured. There are many methods in literature methodology of validity measures. One of these commonly measures is the content validity which based on the judgmental evaluation by several experts to ensure the items of measurement to contain the construct measure of all its aspects. In this study, a comprehensive review of literature was used to develop the items that include the measurements. Additionally, comprehensive discussions with many practioners and academicians were conducted to originate the items' of constructs. Moreover, the questionnaire was distributed among some respondents to review and assess its content validity.

#### **4.10 Factor Analysis**

Factor analysis is a technique for data reduction that used to minimize the number of variables to a smaller set that have similar information. To validate our instrument in the Pilot study stage, the factor analysis on each construct has been tested separately similar to some researchers in literature such as Ahire *et al.* (1996) and Saraph *et al.* (1996).

The Kaiser-Mayrt-Olkin (KMO) has been extracted to check the appropriateness and applicability of factor analysis, and to measure the adequacy sampling and the Bartlett's test of sphericity. Kaiser (1974) argued that KMO is an index to compare the magnitude of the observed correlation coefficient with the partial correlation coefficient. In other words, the smaller of the partial correlation between all variables' pairs, the closer will

KMO near to (1.0) and the more suitable for factor analysis will be. The pilot study findings showed that as shown in Table 5.9, the KMO ranged between 0.503 and 0.875 and therefore the appropriateness of factor analysis.

Factor loading of the items were tested and found that most of them are more than 0.50 according to Hair *et al.* (2010) as acceptable values, except EOP1 has been reported to have lower factor loading. Therefore, EOP1 has been deleted from the questionnaire for data collection purpose.

Table 4.10  
*Factor Analysis and Reliability of the Final Instrument (Pilot Study)*

Constructs	No of Items	Factor loading for items in first factor*	KMO	Eigen-Value	% of Variance	Cronbach's Alpha	Items Deleted
<u>Organization Performance</u>							
Financial	3	.754 .820 .754	.648	1.810	60.327	.668	Nil
Customer	4	.810 .804 .795 .768	.800	2.523	63.068	.796	Nil
Internal Process	4	.843 .882 .828 .654	.773	2.604	65.090	.817	Nil
Learning & Growth	4	.700 .790 .772 .874	.721	2.473	61.835	.785	Nil
<u>Organizational Excellence</u>							
Customer Focus	3	.949 .954 .934	.765	2.682	89.389	.939	Nil
Innovation	3	.900 .887 .918	.739	2.441	81.376	.881	Nil
Personnel Com.	4	.839 .804 .831 .771	.675	2.636	65.897	.825	Nil
<u>TQM</u>							
Management Leadership	4	.901 .877 .939 .911	.811	3.294	82.339	.925	Nil
Strategic Planning	4	.814 .863 .868 .828	.681	2.847	71.167	.863	Nil

Table 4.10 (Continued)

Constructs	No of Items	Factor loading for items in first factor*	KMO	Eigen- Value	% of Variance	Cronbach 's Alpha	Items Deleted
HRM	9	.776 .826 .886 .861 .788 .924 .888 .737 .764	.828	6.199	68.879	.942	Nil
Service Design	3	.874 .935 .890	.708	2.429	80.967	.873	Nil
Information and Analysis	5	.764 .915 .834 .896 .885	.822	3.703	74.056	.906	Nil
Continuous Improvement	4	.895 .920 .860 .889	.798	3.177	79.417	.911	Nil
Benchmarking	3	.884 .928 .927	.737	2.503	83.425	.897	Nil
<u>ERP</u>							
St.IT Planning	5	.828 .888 .895 .891 .861	.833	3.810	76.194	.918	Nil
Executive Commitment	5	.866 .919 .924 .933 .712	.741	3.824	76.474	.917	Nil
Project management	5	.828 .888 .895 .891 .861	.747	3.614	72.281	.901	Nil
IT skills	5	.825 .887 .887 .928 .803	.750	3.759	75.187	.915	Nil
Busi. Procc. Skill	5	.839 .844 .880 .914 .790	.776	3.651	73.017	.906	Nil
Training	5	.814 .747 .857 .834 .816	.729	3.317	66.345	.871	Nil
Learning	5	.752 .765 .860 .890 .828	.656	3.369	67.380	.879	Nil
Change Readiness	5	.844 .924 .880 .942 .867	.875	3.980	79.591	.934	Nil
<u>EO</u>							
Innovativeness	3	.899 .883 .750	.655	2.149	71.649	.800	Nil
Proactiveness	2	.885 .885	.503	1.567	78.342	.723	EOP1
Risk Taking	3	.805 .933 .847	.618	2.236	74.549	.794	Nil
Organizational Culture	7	.758 .855 .659 .457 .785 .797 .802	.740	3.843	54.903	.847	Nil

\*Item are as ordered in the questionnaire

#### **4.11 Proposed Data Analysis Techniques**

The quantitative data that gained from the questionnaire are analyzed by using different analytical techniques. The analysis of data in this study was by using the Statistical Package of Social Sciences (SPSS) version 18.0 and the Smart PLS2.0. The methods of data analysis are selected based on the research questions and the variable characteristics (Byrne, 2001; Kamariah, 2007).

The purpose of the analysis is to achieve reliability in data analysis and hypothesis testing. Among the various tests conducted are data screening and preliminary analyses of missing data, normality, test of non-respondent bias, and outliers. In addition to that, there are some other factors and reliability analysis to test for reliability and validity of measures, goodness, descriptive statistics, correlation analysis, and regression analysis. Therefore, the data were analyzed statistically through the following next steps.

##### **4.11.1 PLS Structural Equation Modeling Approach**

The Partial Least Square (PLS) was proposed by Herman Wold (1982, 1985) as cited by Lohmoller (1987, 1989) in the computational aspects of the LVPLS software. The theoretical development has been attributed to Wold whereas the new graphical interface (PLS-Graph) to Chan (1998, 2001) and Chin and Newsted (1999). The PLSX program by Lohmoller for unit x variables is the foundation for the PLS-Graph software and ultimately enables similar options.

#### **4.11.1.1 The PLS Path Model**

The PLS modeling is a common method that used in the estimation of causal relationships in the field of path models containing latent constructs measured indirectly by several factors. There are two models for the PLS path model's description; a measurement model and a structural model. A measurement model is linking manifest variables (MVs) to their latent variables (LVs), whereas a structural model relates endogenous LVs to LVs. In other words, the structural model is referred to as the inner model while the measurement model referred to as the outer model.

The inner model describes the relationship between latent or unobserved variables while outer model describes the relationship between the latent variable and its manifest variable. As an example of the inner and outer models of PLS path is in Figure 4.1. PLS's general design presents a recursive inner model that is exposed to predictor specifications. So, the inner model involves a casual chain system and contains two different of outer models; they are reflective and formative measurement models are represented by A & B Mode respectively. Therefore, the option of a particular outer mode is demonstrated by theoretical rationale (Diamantopoulos & Winklhofer, 2001).

The reflective mode is a casual relations developed from the latent variable to the manifest variable in the block it is located in. Therefore, each manifest variable in a specific measurement model is perceived to be developed as a linear function of the latent variables along with the residual. However on the other hand, the formative mode develops casual relationships from the manifest variables to the latent ones.

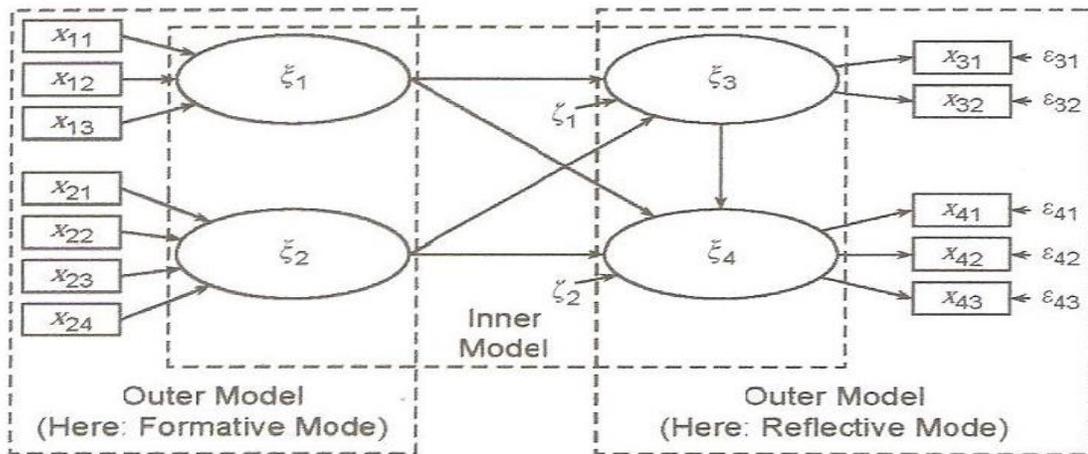


Figure 4.1  
*Example of a PLS Path Model*

Additionally, it is essential to consider how the terms, ‘reflective’ and ‘formative’, and implication connected with the classification of ‘casual’ and ‘effect’, highlight the variation between the characterization of the mode of the latent variable measurement models.

In spite of the original consideration of the latent variable as an exact linear combination of its indicators, the original term is wide as it considers both in an exact linear combination even the latent variable not determined by the indicators (Bollen & Davis, 2009).

This study was used the PLS technique because of the following reasons.

1. PLS path modeling becomes more appropriate for real world applications and more advantageous to use when models are complex (Fornell & Bookstein, 1982; Hulland, 1999). The soft modeling assumptions of PLS technique (i.e.,

ability to flexibly develop and validate complex models) gives it the advantage of estimating large complex models (Akter *et al.*, 2011). The current study examined relationships among six variables which are Total Quality Management, Enterprise Resource Planning, Entrepreneurial Orientation, Organizational Excellence, Entrepreneurial Organizational Culture, and Organizational Performance, within the structural model and hence employing the use of PLS SEM techniques was appropriate for better prediction.

2. Structural equations models have been demonstrated to be superior models those perform estimations better than regressions for assessing mediation (Brown, 1997; Iacobucci, Saldanha, & Deng, 2007; Mattanah, Hancock, & Brand 2004; Preacher & Hayes, 2004). It has been reported that PLS SEM accounts for measurement error and can provide more accurate estimates of mediating effects (Chin, 1998a).

3. PLS SEM offers more meaningful and valid results, while other methods of analysis such as software package used for statistical analysis (SPSS) often result in less clear conclusions and would require several separate analyses (Bollen, 1989).

4. In most social science studies, data tend to have normality problem (Osborne, 2010) and PLS path modeling does not necessarily require data to be normal (Chin, 1998a). In other words, PLS treats non-normal data relatively well. By and large, PLS path modeling was selected for this study to help avoid any normality problem that might arise in the course of data analysis for the current study.

In addition, Tabachnick and Fidel (2007) state that SEM is one of the most powerful statistical tools in social and behavioral sciences that have the ability of testing several relationships simultaneously. Regarding this study, SmartPLS path modeling was used to establish measurement and structural models. Measurement model was used to explain or assess constructs' reliability and validity of the current study. Secondly, structural model was used to conduct bivariate correlation analysis and simultaneous regressions analyses to establish correlations, and relationship effects among constructs under investigation. Additionally, using the PLS mechanisms of algorithm and bootstrapping to examine the mediating effects of organizational excellence and EOC (mediators) on the relationships between TQM, ERP, and EO and organizational performance.

According to Hair *et al.* (2010) stated that partial least squares (PLS) is now well-known as the alternative to SEM method – this includes AMOS, LISREL, and other programs. The PLS path modeling is more suited to complex models such as those with hierarchical constructs (with a complete disaggregation method), mediating and moderating impacts (Chin, Marcolin, & Newsted, 2003). The PLS modeling has to be employed in the initial stage of theoretical development to assess and validate exploratory models. In addition, one of its powerful features is its suitability for prediction-oriented research where the methodology helps researchers to concentrate on the explanation of endogenous constructs. Another feature of PLS is its vulnerability to multicollinearity. In addition, PLS determines measurement models and structural models through multiple regressions,

and hence its estimates can be vulnerable to issues of multicollinearity. Lastly, the PLS path modeling can be utilized in reflective as well as formative measurement models.

In literature, there are many publications that highlight the casual modeling applications that using the PLS path and its beneficial features (Falk & miller, 1992; Fornell & Bookstein, 1982; Joreskog & Wold, 1982; Lohmoller, 1989). The diffuse use of PLS modeling among practitioners and scientists stem from four basic features: (1) PLS can be used in the estimation of path models where there is a smaller sample size (Chin & Newsted, 1999); (2) PLS path modeling algorithm enables unlimited calculation of the cause-and-effect relationship models utilizing both formative and reflective measurement models (Diamantopoulos & Winklhofer, 2001); (3) PLS path modeling is regarded as a methodologically beneficial when compared with CBSEM in some cases when non-convergent or improper outcomes are possible (such as Heywood cases; Krijnen, Dijkstra, & Gill, 1998); (4) PLS path models can turn complex as they include varying latent and manifest variables, but never lead to estimation issues (Wold, 1985).

In addition to that, the amount of manifest and latent variables may be great in relation to the observation number with increasing of complex models. Moreover, PLS path modeling can be used in highly skewed distributions (Bagozzi, 1994).

#### **4.11.1.2 Steps of PLS Analysis**

Since SmartPLS cannot take natural Excel file format directly, the data set has to be converted into .csv file format. So the researcher do that, by going to the “File” menu in

Excel, and choose “CSV (Comma Delimited)” as the file format type to save it onto your computer, then the researcher following the steps of PLS approach as below:

#### **4.11.1.2.1 The Convergent Validity of the Measurements**

The convergent validity is defined as the degree to which a set of variables converge in measuring a particular concept (Hair *et al.*, 2010). To establish the convergent validity, many criteria namely the factor loadings, composite reliability (CR) and average variance extracted (AVE) were used simultaneously as suggested by Hair *et al.* (2010). Item’s loadings, individual item loadings greater than 0.7 are considered adequate (Fornell & Larcker, 1981). In addition, items have loadings more than 0.5 which is the acceptable level suggested in the multivariate analysis literature (Hair *et al.*, 2010).

The second aspect of the convergent validity is the composite reliability which indicates the degree to which a set of items consistently indicate the latent construct (Hair *et al.*, 2010). The cut-off value for composite reliability is 0.7 (Fornell & Larcker, 1981; Hair *et al.*, 2010).

To confirm the convergent validity of the outer model, the values of the average variance extracted (AVE) was examined. The average variance extracted (AVE) reflects the average of the variance extracted among a set of items relatively to the variance shared with the measurement errors. More specifically, AVE measures the variance captured by the indicators in relative to the variance assignable to the measurement errors. If the AVE values are at least 0.5, this suggests these set of items has an adequate convergence in measuring the concern construct (Barclay *et al.*, 1995).

#### **4.11.1.2.2 The Discriminant Validity of the Measures**

To confirm the construct validity of the outer model, it was necessary to establish the discriminant validity. This step was mandatory prior to testing the hypotheses through the path analysis. The discriminant validity of the measures shows the degree to which items differentiate among constructs. Simply put, it shows that the items used different constructs do not overlap. Therefore, constructs although correlated, yet measure distinct concepts. This meaning was clearly explained by Compeau, Higgins, and Huff (1999) where he concluded that if the discriminant validity of the measures was established, it means that the shared variance between each construct and its measures should be greater than the variance shared among distinct constructs. The discriminant validity of the measures was confirmed employing the method of Fornell and Larcker (1981). As the square root of average variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. As the diagonal elements were higher than the other element of the row and column in which they are located, this confirms the discriminant validity of the outer model. Having established the construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be valid and reliable.

#### **4.11.1.2.3 The Goodness of Fit of the Model**

Dislike the CBSEM approach; PLS Structural Equation Modeling has only one measure of goodness of fit. As defined by Tenenhaus *et al.* (2005), a global fit measure (GoF) for PLS path modeling is the geometric mean of the average communality and average  $R^2$  for the endogenous constructs. Therefore, the goodness of fit measure accounts for the

variance extracted by both outer and inner models. To support the validity of the PLS model, GoF value was estimated according to the guidelines set up by Wetzels, Odekerken-Schroder, and Van Oppen (2009) as given in the following formula.

$$Gof = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

#### **4.11.1.2.4 The Prediction Relevance of the Model**

As it is widely known in the literature of multivariate data analysis,  $R^2$  of the endogenous variable accounts for the variance of a particular variable that is explained by the predictor variables. Therefore, the magnitude of the  $R^2$  for the endogenous variables was considered as an indicator of predictive power of the model. In addition to that, the sample reuse technique was applied as developed by Stone (1975) and Geisser (1975) to confirm the predictive validity of the model. It was argued by Wold (1982) that the sample's reuse technique to fit, very well, the PLS modeling approach (Götz, Liehr-Gobbers, & Krafft, 2011).

More specifically, the predictive relevance of the model can be examined by the Stone–Geisser non-parametric test (Chin, 1998; Fornell & Cha, 1994; Geisser, 1975; Stone, 1975). This can be performed employing the blindfolding procedure embedded in Smart-PLS 2.0 package. Blindfolding procedure is designed to remove some of the data and to handle them as missing values to estimate the parameters. Next, the estimated parameters are then used to reconstruct the raw data that are assumed previously missing. As a result, the blindfolding procedure produces general cross-validating metrics  $Q^2$ .

In general, there are different forms of  $Q^2$  that can be obtained based on the form of desired prediction. A cross-validated communality  $Q^2$  is obtained when the data points are predicted using the underlying latent variable scores. Whereas, if the prediction of the data points is obtained by the LVs that predict the block in question, then a cross-validated redundancy  $Q^2$  is the output.

As indicated by Fornell and Cha (1994), the cross-validated redundancy measure can be a reliable indicator of the predictive relevance of the examined model. If the test criterion, redundant communality was found to be larger than 0 for all the endogenous variables, the model is considered to have predictive validity, otherwise, the predictive relevance of the model cannot be concluded (Fornell & Cha, 1994).

#### **4.11.1.2.5 The Assessment of the Inner Model and Hypotheses Testing Procedures Path Coefficient Estimation**

The PLS path modeling method is a commonly used method in the estimation of causal relationships in the field of path models involving latent constructs that are measured indirectly by many indicators. Previous studies by Wold (1982), Lohmöller (1989), Chin (1998), Tenenhaus, Vinzi, Chatelin, and Lauro (2005) explained the methodological basis and methods for outcome evaluation and provided some instances of this methodology.

A PLS path model's description is provided by two models; a measurement model linking the manifest variables (MVs) to their latent variables (LVs), and a structural model that relates endogenous LVs to other LVs. The measurement model is referred to as the outer model while the structural model is referred to as the inner one.

The inner model describes the relation between unobserved or latent variables while the outer one describes the relation between a latent variable and its manifest variable. An example of a PLS path model Figure 5.2. The general design of a PLS presents a recursive inner model that is exposed to predictor specifications. Therefore, the inner model comprises a causal chain system and includes two varying types of outer models; the reflective and the formative measurement models are represented by Mode A&B respectively. The choice of a particular outer mode is explained by theoretical rationale (Diamantopoulos & Winklhofer, 2001).

#### **4.11.1.2.6 Structural Path Significance in Bootstrapping**

SmartPLS can generate T-statistics for significance testing of both the inner and outer model, using a procedure called bootstrapping. In this procedure, a large number of subsamples (e.g., 500) are taken from the original sample with replacement to give bootstrap standard errors, which in turn gives approximate T-values for significance testing of the structural path. The Bootstrap result approximates the normality of data.

To be able to conclude whether the path coefficients are statistically significant or not, this study employed the bootstrapping techniques embedded with SmartPLS2.0. To run bootstrapping of this model the researcher used 500 samples with number of cases equal to the observations out of 355 cases. More specifically, the T values accompanying each path coefficient was generated using the bootstrapping technique and subsequently the P values were generated as reported in chapter 6.

#### **4.12 Summary**

The methodology of the study has been discussed in this chapter. As discussed earlier that this study is a correlational study to test the causality relationship among the variables under examination and also the mediation effect with using suitable statistical techniques.

Furthermore, this chapter provided information about the population, sampling, and technique used in this study. For the sake of pilot study, one hundred and eleven were collected and analyzed to ensure the reliability and validity of the measurement used that will help to gather more accurate and high quality data in the stage of collecting the real data.

## CHAPTER FIVE

### DATA ANALYSIS AND RESULTS

#### 5.1 Introduction

This chapter reports the results of the data analysis. First, this study examined the distribution of the demographic variables (Gender, Qualifications, and Experiences) for all respondents. Then, this study compares the early and late response from respondents to assess the non-response bias. After that, this study discusses the descriptive analysis of the variables and the normality testing. This study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the outer measurement model before the inner structural model assessment and hypotheses testing.

The goodness of the outer model related to the constructs of this study namely Total Quality Management (with leadership, strategic planning, human resource management, service design, information and analysis, continuous improvement, and benchmarking as dimensions), Enterprise Resource Planning (with strategic IT planning, executive commitment, project management, IT skills, business process, training, learning, and change readiness as dimensions), Entrepreneurial Orientation (with innovativeness, risk-taking, and proactiveness as dimensions) and Organizational Performance (with financial, customer, internal process, and learning & growth as dimensions). Next, the quality of the structural model was examined through the construct validity. Finally, the findings of the hypotheses testing procedures were reported and the mediating effect of Organizational Excellence and Entrepreneurial Organizational Culture were reported.

## 5.2 Demographic Distribution of the Respondents

The data collected using the survey questionnaire over the period of three months from Jan 2014 to March 2014. The final collected data sample includes 355 participants from all departments and police stations who completed the questionnaire as illustrated in Table 5.1 below:

Table 5.1  
*Number of Samples That Have Been Collected From All Departments*

<b>Respondents' Department</b>	<b>Frequencies</b>	<b>Percentage (%)</b>
General Department of Administrative Affairs	7	1.97
General Department of Airport Security	13	3.66
General Department of Criminal Investigation	49	13.8
General Department of Punitive and Correctional Establishments	18	5.07
General Department of Traffic	16	4.51
General Department of Anti Narcotic	18	5.07
General Department of Operation	24	6.76
General Department of Organizations Protective Security and Emergency	18	5.07
General Department of Human Rights in Dubai Police	12	3.38
General Department of Finance	7	1.97
General Department of Human Resources	20	5.63
General Department of Community Services	16	4.51
General Department of Services and Supplies	38	10.7
General Department of E-Services	9	2.54
General Department of Total Quality Management	5	1.41
General Department of Forensic Science and Criminology	20	5.63
General Department of Training	8	2.25

Table 5.1 (Continued)

<b>Respondents' Department</b>	<b>Frequencies</b>	<b>Percentage (%)</b>
Dubai Police Academy	22	6.2
Decision Making Support Center	3	0.85
HQ's Regulatory Office	7	1.97
Police Stations	25	7.04
<b>Total</b>	<b>355</b>	<b>100%</b>

The final sample included General Departments of Administrative Affairs, Airport Security, Criminal Investigation, Punitive and Correctional Establishments, Traffic, Anti Narcotic, Operation, Organizations Protective Security and Emergency, Human Rights in Dubai Police, Finance, Human Resources, Community Services, Services and Supplies, E-Services, Total Quality Management, Forensic Science and Criminology, Training, Dubai Police Academy, Decision Making Support Center, HQ's Regulatory Office, and Police Stations. The overall response rate from respondents was 63%. This high response rate for this study is due to the self-administration method that has been used to distribute or collect questionnaires. The researcher himself and his friends and colleagues from all departments participated in collecting data.

The demographic variables have been categorized into three categories, which are gender, qualifications, and experiences. In Table 5.2, the respondents who respond to this study from male are 332 which represent 93.5%, and female are 23 with 6.5%. The majority of the respondents are holding college degree qualification (254) which represents 71.5%, under high school (3.1%), high school (17.7%), and the rest of 27 respondents (7.6%) possess graduate degree (Master and Doctorate).

In terms of experiences of the respondents, majority of them were having more than 10 years experiences (58.3%), 102 for respondents having 0-5 years experiences (28.7%), and the rest (46) were having experiences from 6 to 9 years (13%).

Table 5.2  
*Participants' Demographic Information*

<b>Demographic Variable</b>	<b>Category</b>	<b>Frequency (N=355)</b>	<b>Percent %</b>
<b>Gender</b>	Male	332	93.5
	Female	23	6.5
<b>Qualifications</b>	Under High School	11	3.1
	High School	63	17.7
	College Degree	254	71.5
	Graduate Studies	27	7.6
<b>Experiences</b>	0-5 Years	102	28.7
	6-9 Years	46	13.0
	10 Years or more	207	58.3

### **5.3 Testing Non-Response Bias**

This study employed a survey questionnaire as a tool of data collection. However, the questionnaire was self-administrated but it was necessary to conduct the non-response bias for some reasons. Some respondents responded only after many visits and reminders, and the data collection period was between January and March 2014.

For the purpose of assessing the non-response bias, T-test was conducted to compare the waves of response of the early and late responses for the variables of the study. Based on the suggestions of Armstrong and Overton (1977) and Kannan, Tan, Handfield, and Ghosh (1999), if there is a difference between the early and late responses were found to be significant, they may refer to the underlying differences between non-respondents and respondents.

To test the non-response bias, T-test has been carried out between the 312 early respondents and the 43 late respondents. In addition, all the constructs of the study were taken into consideration. Before examining the equality of the means across the early and late responses, the levene's test of equality of variances was examined. The results confirmed that the variances are homogeneous across the two groups at the 0.01 level of significance. The next step was to examine the equality of the means across the two group through all the variables of the study. The results in Table 5.3 showed that there were no significant differences between the early and late respondents for all the variables since the equality of the mean responses of both groups were supported at the 0.01 level of significance.

Table 5.3  
*T-test results for Non-Response Bias*

Construct	Dimension	Response	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F Value	Sig.	T- Value	DF	Sig. (2- tailed)
Organizational Performance	Financial	Early	1.371	.242	1.032	353	.303
		Late			.971	52.342	.336
	Customer	Early	.458	.499	1.851	353	.065
		Late			1.875	54.676	.066
	Internal Process	Early	.073	.788	.787	353	.432
		Late			.756	52.950	.453
	Learning & Growth	Early	.435	.510	1.686	353	.093
		Late			1.668	53.877	.101
	Customer Focus	Early	.017	.897	1.070	353	.285
		Late			1.117	55.791	.269
Organizational Excellence	Innovation	Early	.688	.407	.529	353	.597
		Late			.520	53.694	.605
	Personnel Commitment	Early	.552	.458	.634	353	.526
		Late			.573	51.234	.569
	Leadership	Early	2.287	.131	1.709	353	.088
		Late			1.465	50.005	.149
	Strategic Planning	Early	1.150	.284	1.122	353	.262
		Late			1.025	51.526	.310
	HRM	Early	.944	.332	-.090	353	.929
		Late			-.082	51.534	.935
Total Quality Management	Service Design	Early	.691	.407	.324	353	.746
		Late			.314	53.285	.754
	Information and Analysis	Early	.002	.960	.317	353	.751
		Late			.320	54.598	.750
	Continuous Improvement	Early	.100	.752	.881	353	.379
		Late			.803	51.475	.425
	Benchmarking	Early	.025	.875	.232	353	.816
		Late			.247	56.493	.806

Table 5.3 (Continued)

Construct	Dimension	Response	Levene's Test for Equality of Variances		t-test for Equality of Means		
			F Value	Sig.	T- Value	DF	Sig. (2- tailed)
Enterprise Resource Planning	Strategic IT Planning	Early	3.105	.079	1.162	353	.246
		Late			1.082		52.048
	Executive Commitment	Early	.390	.533	1.114	353	.266
		Late			1.095		53.666
	Project Management	Early	4.343	.038	1.436	353	.152
		Late			1.212		49.653
	IT Skills	Early	.455	.500	.344	353	.731
		Late			.320		51.951
	Business Process	Early	.443	.506	-.008	353	.993
		Late			-.008		52.109
	Training	Early	.016	.901	.625	353	.532
		Late			.612		53.537
	Learning	Early	3.344	.068	.878	353	.381
		Late			.781		50.861
	Change Readiness	Early	2.830	.093	1.431	353	.153
		Late			1.261		50.618
Innovativeness	Early	3.962	.047	1.559	353	.120	
	Late			1.305		49.477	.198
Entrepreneurial Orientation	Proactiveness	Early	1.927	.166	1.169	353	.243
		Late			1.056		51.250
Risk-taking	Early	1.306	.254	1.369	353	.172	
	Late			1.265		51.835	.212
Entrepreneurial Organizational Culture	EOC	Early	2.060	.152	1.504	353	.133
		Late			1.317		50.490

## 5.4 Descriptive Statistics

A descriptive analysis for data was conducted to describe the Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Excellence (OE), Organizational Performance (OP), and Entrepreneurial

Organizational Culture (EOC) from the respondents' perspective. In Table 5.4, the mean, standard deviation, minimum and maximum of the constructs were reported. These results showed the implementation level of each factor of TQM, EO, ERP, and EOC. In addition, it reflected the perceived performance level of DP context.

As tabulated in Table 5.4, the minimum value of all the constructs was 1.00 and the maximum value was 7.00 which represent the Likert scale used in this study. The same data showed that Strategic Planning had the maximum mean value among other TQM dimensions with the lowest standard deviation. These results clearly indicated that head section officers highly focused and emphasized on strategic planning practice in accomplishing the desired organizational performance. The lowest standard deviation value indicated that officers were not significantly different in their opinion about the importance of strategic planning for sustainable organizational performance.

The next high value of mean is benchmarking. The mean was 5.321 with standard deviation 1.265. The results revealed that officers emphasized on benchmarking besides strategic planning to achieve organizational performance. Leadership's mean and standard deviation values were 5.272 and 1.331 respectively. The results also emphasized on the importance of leadership beside other strategic practices explained above. The importance of Information and Analysis also realized by respondents with mean value 5.224 and 1.149 for standard deviation. The significant of information and analysis was moderated by respondents. In other words, however the importance of information and analysis for any development in the organization, but it is not more than strategic planning, benchmarking, and leadership.

Moreover, Table 5.4 revealed that Service Design and Continuous Improvement had mean values 5.084 and 5.151 respectively. In addition, their standard deviations were 1.301 and 1.195 respectively. Moreover, HRM construct was reported to have the lowest mean as 4.917 with standard deviation 1.228. These results indicated the lack of HR management in DP which led to poor practices in service design and continuous improvement. In other words, human resources are the most important asset to achieve other practices, therefore, DP should focus more on how they can increase the awareness of the importance of their employees beside satisfy them to achieve the aimed organizational performance.

Similarly, the data in Table 5.4 revealed that among enterprise resource planning (ERP) dimensions, business process was reported to have the maximum mean as 5.371 with standard deviation as 1.184 which reflects the importance of the business processes when implementing ERP system. In addition to that, change readiness was found to have the lowest mean as 4.692 and standard deviation as 1.542. The lowest mean and the highest standard deviation of change readiness can be analyzed from the angle of resistance to change found in DP. DP should increase the awareness of change as a culture to make their employees ready to change their processes when implementing ERP. In their point of view, ERP system as a new practice in the organization, will replace the ancient systems which are familiar with and widely understood by employees. To convince employees to use the new system, many procedures should be implemented by DP leaders such as training, lectures, and customization.

Furthermore, Table 5.4 showed that risk-taking had the highest mean value with 4.372 and the second lowest standard deviation as 0.673 indicating the readiness of officers to take the risk to increase the performance of DP. Additionally, proactiveness was found to have a mean value as 4.454 and the lowest standard deviation value as 0.627. Moreover, innovativeness was found to have the lowest mean value as 3.634 and the highest standard deviation 0.863 which indicated that DP lack the suitable innovativeness that can lead them to increase organizational performance.

Regarding organizational excellence (OE), the results in Table 5.4 indicated that the dimensions of OE have the highest mean values among the whole constructs. This revealed that the awareness of DP' officers the importance towards practicing excellence when dealing with TQM, ERP, and EO. The OE dimensions customer focus, innovation, and personnel commitment had mean values as 5.676, 5.266, and 5.492 respectively. In addition, their standard deviations were 1.22, 1.155, and 1.316 also respectively. The results showed that DP' officers realized the importance of focusing on customer, concentrate on innovation, and commit on personnel.

Table 5.4 also reported the results of entrepreneurial organizational culture (EOC) construct which indicated a lower mean value as 3.890 and standard deviation as 0.725. This lower mean value indicated that EOC as a mechanism that can increase the entrepreneurial activities has not fully appreciated by DP' officers.

Regarding the organizational performance construct, the results in Table 5.4 showed the lowest mean values as 3.311, 4.189, 3.729, and 3.956; however standard deviation showed lower results as 0.845, 0.740, 0.742, and 0.64. As it is normal that the self-

assessment indicated high performance, this study showed that the respondents criticized the current performance in DP which reflects the problem of the study. Also, the small values of standard deviation revealed the fact that this perception is almost agreed among most of DP' officers.

Table 5.4  
*Descriptive Statistics of the Constructs*

Variable	Dimension	N	Minimum	Maximum	Mean	Std. Deviation
Organizational Performance	Financial	355	1.00	5.00	3.311	.845
	Customer	355	1.00	5.00	4.189	.740
	Internal Process	355	1.00	5.00	3.729	.742
	Learning & Growth	355	1.00	5.00	3.956	.640
Organizational Excellence	Customer	355	1.00	7.00	5.676	1.227
	Innovation	355	1.00	7.00	5.266	1.155
	Commitment	355	1.00	7.00	5.492	1.316
	Leadership	355	1.00	7.00	5.272	1.331
Total Quality Management	Strategic Planning	355	1.00	7.00	5.387	1.110
	HRM	355	1.00	7.00	4.917	1.228
	ServiceDesign	355	1.00	7.00	5.084	1.301
	InformationAnalysis	355	1.00	7.00	5.224	1.149
	Continuous Improvement	355	1.00	7.00	5.151	1.195
	Benchmarking	355	1.00	7.00	5.321	1.265
	Strategic IT Planning	355	1.00	7.00	5.347	1.110
Enterprise Resource Planning	Executive Commitment	355	1.00	7.00	5.406	1.062
	Project Management	355	1.00	7.00	5.201	1.250
	IT Skills	355	1.00	7.00	5.082	1.385
	Business Process	355	1.00	7.00	5.371	1.184
	Training	355	1.00	7.00	5.190	1.291
	Learning	355	1.00	7.00	4.871	1.418
Entrepreneurial Orientation	Change Readiness	355	1.00	7.00	4.692	1.542
	Innovativeness	355	1.00	5.00	3.634	.863
	Proactiveness	355	1.00	5.00	4.454	.627
	Risk-taking	355	1.00	5.00	4.372	.673
Entrepreneurial Organizational Culture	EOC	355	1.00	5.00	3.890	.725

## **5.5 The Rationale behind Choosing PLS SEM for this Study**

The purpose of this study is to investigate the relationships among latent variables; therefore the latent analysis technique was the suitable option. There were a choice to use covariance-based SEM technique such as AMOS but the data must be normally distributed (Byrne, 2010; Hair *et al.*, 2010). The following assumptions have been tested in SPSS before choosing the technique of the analysis.

### **5.5.1 Assumption of Normality**

The normality employed to show the symmetrical curve that has the greatest frequency of scores towards extremes in the small and middle frequencies (Pallant, 2005). To do so, some researches such as Kline (1998) and Pallant (2005) suggested assessing the normal distribution of scores for the independent and dependent variables through examining their skewness and kurtosis values. In social sciences, the nature of the constructs has many scales and measures may result skewed positively or negatively (Pallant, 2005). In addition, kurtosis is also a score for measuring distribution that represents the degree to which observations around the central mean are gathered.

According to Hair *et al.* (2006) the values of skewness outside the range of +1 to -1 are substantially skewed distribution. However, Kline (1998) suggested the cut off between +3 to -3 will be acceptable. Based on these criteria suggested by many researchers, the skewness values were within the acceptable range suggested by Kline (1998) (+3 to -3), however, not acceptable values according to Hair *et al.* (2006) (+1 to -1). Similarly, the

values of kurtosis are suggested by Coakes and Steed (2003) to range from +3 to -3 which are acceptable based on the below Table 5.5.

Based on discussion above, the results show that some of values in skewness deviate from being normally distributed. Therefore, to be able to handle non-normal and skewed data to test the hypothesized relationships, this study employed PLS Structural Equation Modelling that is the distribution free statistical modeling technique (Chin, 1998).

Table 5.5  
*Results of Skewness and Kurtosis for Normality Test*

Factor	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Financial	-.369	.129	.634	.258
Customer	-1.516	.129	2.852	.258
Internal	-.557	.129	.148	.258
Learning	-.458	.129	.508	.258
Customer Focus	-1.499	.129	2.849	.258
Innovation	-.920	.129	1.494	.258
Personnel Commitment	-1.411	.129	2.323	.258
Leadership	-1.459	.129	2.727	.258
Strategic Planning	-.783	.129	.857	.258
HRM	-.383	.129	-.272	.258
Service Design	-.442	.129	-.587	.258
Information and Analysis	-.450	.129	-.095	.258
Continuous Improvement	-.534	.129	.446	.258
Benchmarking	-.705	.129	.127	.258
ERPSP	-.634	.129	.047	.258
ERPEC	-.570	.129	.354	.258
ERPPM	-.811	.129	1.452	.258
ERPIS	-.614	.129	.018	.258
ERPPPS	-.757	.129	.973	.258
ERPT	-.463	.129	-.584	.258
ERPL	-.749	.129	.026	.258
ERPCR	-.623	.129	-.185	.258
Innovativeness	-.303	.129	-.479	.258
Proactiveness	-1.201	.129	2.251	.258
Risk-taking	-1.369	.129	2.769	.258
EOC	-.595	.129	-.011	.258

### **5.5.2 Test of Linearity**

Linearity testing locates the association of independent variables with dependent variable which predicts the hypotheses' right direction; therefore, the positive values indicate the relationship is considered positive. Based on the suggestion of Hair *et al.* (2006), the partial regression plot was used for each variable when there is more than one independent variable to guarantee the best representation in the equation. To achieve this purpose, the normal P-P plot of regression standardized residual plot was imposed for independent variables on dependent variable. The results showed that the normal distribution was achieved. In Appendix 5, the graph of the output for linearity test is attached.

### **5.5.3 Multicollinearity Test**

The test of multicollinearity among variables is highly recommended before beginning of testing the proposed model (Hair *et al.*, 2010). It indicates to the existence of relapse of in the correlation matrix in which the independent variable is high and significantly correlated with another independent variable. In addition, the revelation of multicollinearity can be detected when the correlation value is more than 0.90 (Hair *et al.*, 2010). The test of multicollinearity is facilitated by examining the variance influence factor (VIF) and the tolerance value.

Moreover, the value of the VIF is the amount of variability of the selected independent variable which is explained by other independent variables where as the tolerance is the inverse of VIF (Hair *et al.*, 2010). The VIF and tolerance values cut-off pointes are 10

and 0.10 respectively which indicates that VIF closer to 1.00 represents little or no multicollinearity.

Table 5.6 shows that the three models highlight collinearity statistics for all independent variables. Moreover, the correlation between variables was below 0.90 which indicated that there is no problem in multicollinearity. Additionally, VIF values range between 1 and 2.851, whereas tolerance values range between 0.351 and 0.687. Therefore, the results reported that there is no violation of multicollinearity assumption.

Table 5.6  
*Multicollinearity Test*

Model		Collinearity Statistics	
		Tolerance	VIF
Total Quality Management		.358	2.794
Enterprise Resource Planning	Organizational	.351	2.851
Entrepreneurial Orientation	Excellence	.540	1.852
Entrepreneurial Orientation	Entrepreneurial	1.000	1.000
	Organization		
	Culture		
Entrepreneurial Organization	Organizational	.687	1.455
Culture	Performance	.687	1.455
Organizational Excellence			

## 5.6 Testing the Goodness of the Measurements

The goodness of the measures of this study was examined by employing Factor Analysis using SPSS version 18.0 to identify the factors underlying the variables (in chapter 5) and utilized the Partial Least Square Structural Equation Modeling using SmartPLS 2.0 to set up the construct validity of the measures that will be discussed in the following sections.

### 5.6.1 Testing the Measurement, Outer, Model Using PLS Approach

Before testing the study's hypotheses, the measurement model, outer model, was assessed through the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. To achieve that, this study followed the two steps approach suggested by Anderson and Gerbing (1988). Figure 5.1 below shows the model of this study with structural dimensions.

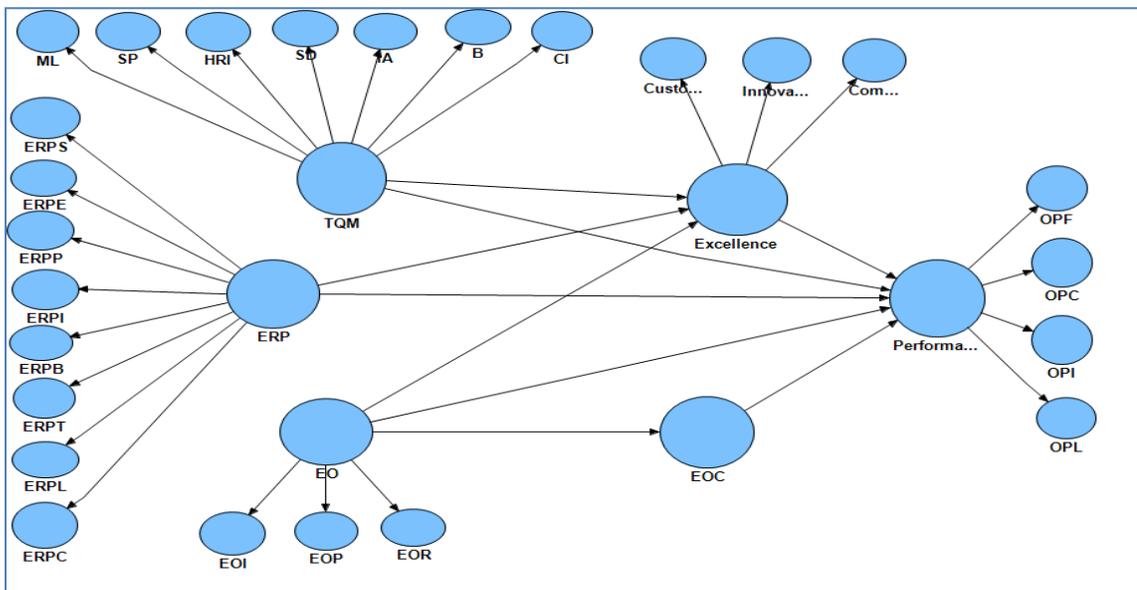


Figure 5.1  
*The Research Model*

#### 5.6.1.1 The Construct Validity

According to Hair *et al.* (2010), the construct validity can be examined through the content validity, convergent validity, and discriminant validity.

#### **5.6.1.1.1 The Content Validity**

The content validity refers to the degree to which the items proposed to measure a construct can suitably measure the concept that designed to be measured (Hair *et al.*, 2010). In other words, the items that designed to measure a construct should be higher loaded on their respective than their loading on other constructs. Therefore, through comprehensive review of the previous studies in literature review, this can be insured of how items were generated. Based on the analysis of factor analysis, all items were correctly assigned to their constructs. The Table 5.5 showed the content validity of the measure used as explained in two ways. Firstly, there are high loading in the items on their respective constructs when compared to other constructs. Secondly, the loading of the items were significantly loading on their respective constructs assuring the content validity of the measures employed in this study as illustrated in Tables 5.5 and 5.6 (Chow & Chan, 2008).

Table 5.7  
Factor Analysis and loadings of the items

Construct	Items	B	CI	CMT	CT	EOC	EOI	EOP	EOR	ERPB	ERPC	ERPE	ERPI	ERPL	ERPP	ERPS	ERPT	HRM	IA	Inn	ML	OPC	OPF	OPI	OPL	SD	SP
Benchmarking	B1	<b>0.88</b>	0.80	0.28	0.45	0.46	0.51	0.34	0.46	0.55	0.37	0.72	0.53	0.50	0.45	0.73	0.50	0.75	0.71	0.49	0.47	0.35	0.16	0.32	0.35	0.72	0.61
	B2	<b>0.92</b>	0.74	0.30	0.32	0.40	0.49	0.21	0.35	0.56	0.36	0.57	0.56	0.45	0.42	0.70	0.47	0.76	0.73	0.47	0.46	0.26	0.17	0.29	0.35	0.71	0.53
	B3	<b>0.91</b>	0.73	0.36	0.36	0.34	0.47	0.26	0.37	0.52	0.27	0.58	0.52	0.40	0.40	0.71	0.41	0.67	0.71	0.51	0.52	0.25	0.16	0.30	0.38	0.68	0.58
Continuous Improvement	CI1	0.74	<b>0.90</b>	0.50	0.53	0.63	0.61	0.36	0.45	0.62	0.57	0.75	0.63	0.61	0.59	0.75	0.60	0.77	0.86	0.60	0.55	0.41	0.39	0.48	0.52	0.82	0.66
	CI2	0.77	<b>0.93</b>	0.49	0.41	0.63	0.59	0.33	0.43	0.61	0.47	0.74	0.58	0.52	0.61	0.78	0.49	0.78	0.81	0.61	0.67	0.33	0.37	0.45	0.49	0.80	0.69
	CI3	0.68	<b>0.87</b>	0.49	0.40	0.59	0.63	0.40	0.39	0.44	0.44	0.68	0.44	0.40	0.53	0.64	0.45	0.79	0.75	0.55	0.58	0.30	0.37	0.45	0.34	0.64	0.56
People Commitment	EXP1	0.34	0.49	<b>0.85</b>	0.53	0.42	0.40	0.33	0.28	0.34	0.44	0.32	0.37	0.30	0.57	0.27	0.28	0.45	0.52	0.78	0.53	0.42	0.58	0.65	0.55	0.46	0.46
	EXP2	0.34	0.48	<b>0.86</b>	0.68	0.51	0.49	0.41	0.47	0.31	0.41	0.39	0.34	0.34	0.56	0.28	0.29	0.42	0.51	0.73	0.52	0.54	0.59	0.60	0.54	0.44	0.50
	EXP3	0.22	0.32	<b>0.84</b>	0.67	0.44	0.33	0.42	0.42	0.20	0.33	0.36	0.20	0.16	0.53	0.27	0.21	0.23	0.40	0.60	0.54	0.57	0.58	0.38	0.54	0.32	0.44
Customer Focus	EXP4	0.26	0.38	<b>0.80</b>	0.51	0.47	0.27	0.36	0.46	0.34	0.43	0.36	0.31	0.28	0.56	0.27	0.28	0.36	0.44	0.53	0.63	0.52	0.32	0.33	0.44	0.37	0.53
	EXC1	0.36	0.42	0.61	<b>0.93</b>	0.49	0.46	0.50	0.68	0.36	0.33	0.52	0.33	0.29	0.48	0.38	0.33	0.39	0.44	0.58	0.37	0.68	0.41	0.45	0.55	0.41	0.54
	EXC2	0.40	0.47	0.67	<b>0.95</b>	0.52	0.47	0.45	0.63	0.42	0.41	0.51	0.39	0.36	0.48	0.37	0.38	0.39	0.49	0.66	0.38	0.72	0.49	0.48	0.62	0.42	0.50
Entrepreneurial Culture	EXC3	0.41	0.40	0.73	<b>0.93</b>	0.45	0.42	0.46	0.70	0.46	0.38	0.41	0.36	0.30	0.49	0.37	0.38	0.40	0.46	0.71	0.38	0.62	0.40	0.48	0.55	0.36	0.44
	EOC1	0.26	0.50	0.50	0.49	<b>0.77</b>	0.50	0.38	0.45	0.29	0.37	0.59	0.29	0.34	0.51	0.44	0.30	0.38	0.39	0.41	0.60	0.46	0.48	0.36	0.55	0.39	0.53
	EOC2	0.40	0.55	0.50	0.49	<b>0.87</b>	0.63	0.47	0.58	0.55	0.60	0.59	0.53	0.62	0.68	0.46	0.47	0.50	0.52	0.47	0.48	0.48	0.39	0.37	0.53	0.52	0.53
	EOC3	0.27	0.33	0.43	0.48	<b>0.70</b>	0.52	0.31	0.66	0.52	0.54	0.41	0.43	0.52	0.51	0.29	0.42	0.34	0.35	0.33	0.33	0.58	0.18	0.17	0.43	0.32	0.31
	EOC4	0.20	0.28	0.33	0.35	<b>0.59</b>	0.45	0.34	0.38	0.22	0.26	0.26	0.29	0.20	0.35	0.22	0.09	0.23	0.33	0.26	0.21	0.29	0.22	0.12	0.25	0.31	0.25
	EOC5	0.32	0.49	0.42	0.28	<b>0.78</b>	0.49	0.35	0.27	0.38	0.44	0.48	0.47	0.41	0.48	0.37	0.40	0.46	0.50	0.36	0.37	0.23	0.35	0.24	0.33	0.48	0.33
	EOC6	0.40	0.61	0.40	0.24	<b>0.75</b>	0.48	0.37	0.39	0.41	0.52	0.56	0.47	0.48	0.57	0.49	0.42	0.50	0.56	0.37	0.50	0.19	0.42	0.36	0.38	0.56	0.48
Innovativeness	EOC7	0.48	0.62	0.28	0.33	<b>0.77</b>	0.51	0.48	0.50	0.42	0.34	0.57	0.42	0.41	0.40	0.53	0.51	0.61	0.57	0.33	0.31	0.23	0.21	0.34	0.39	0.56	0.31
	EOI1	0.47	0.57	0.42	0.42	0.67	<b>0.88</b>	0.32	0.49	0.57	0.66	0.47	0.60	0.63	0.55	0.46	0.57	0.50	0.55	0.44	0.39	0.36	0.21	0.25	0.40	0.49	0.42
	EOI2	0.39	0.56	0.51	0.42	0.64	<b>0.90</b>	0.34	0.32	0.37	0.52	0.42	0.45	0.49	0.54	0.37	0.40	0.39	0.56	0.51	0.41	0.37	0.39	0.27	0.48	0.46	0.39
Proactiveness	EOI3	0.54	0.54	0.19	0.38	0.42	<b>0.77</b>	0.33	0.33	0.41	0.30	0.46	0.45	0.37	0.32	0.50	0.43	0.47	0.49	0.45	0.24	0.24	0.19	0.31	0.39	0.46	0.41
	EOP2	0.33	0.38	0.29	0.37	0.47	0.38	<b>0.87</b>	0.42	0.19	0.23	0.38	0.18	0.18	0.38	0.29	0.23	0.36	0.37	0.29	0.25	0.36	0.42	0.39	0.43	0.33	0.31
Risk-Taking	EOP3	0.21	0.25	0.50	0.51	0.45	0.30	<b>0.90</b>	0.58	0.20	0.10	0.23	0.16	0.07	0.41	0.20	0.19	0.30	0.30	0.47	0.22	0.50	0.23	0.51	0.54	0.26	0.26
	EOR1	0.28	0.28	0.41	0.60	0.45	0.25	0.68	<b>0.80</b>	0.24	0.15	0.33	0.17	0.11	0.39	0.34	0.22	0.27	0.29	0.34	0.19	0.48	0.19	0.37	0.47	0.26	0.27
	EOR2	0.42	0.46	0.50	0.66	0.60	0.48	0.47	<b>0.91</b>	0.49	0.36	0.44	0.40	0.35	0.46	0.40	0.32	0.46	0.38	0.47	0.38	0.54	0.14	0.43	0.48	0.34	0.48
Business Process Skills	EOR3	0.41	0.38	0.30	0.54	0.53	0.39	0.29	<b>0.81</b>	0.60	0.45	0.43	0.52	0.48	0.44	0.38	0.38	0.45	0.37	0.27	0.25	0.55	0.12	0.23	0.32	0.38	0.39
	ERP1	0.44	0.48	0.26	0.25	0.38	0.41	0.10	0.29	<b>0.85</b>	0.66	0.52	0.83	0.76	0.50	0.59	0.73	0.49	0.50	0.45	0.30	0.25	0.12	0.29	0.38	0.52	0.48
	ERP2	0.58	0.57	0.25	0.42	0.50	0.48	0.21	0.49	<b>0.88</b>	0.60	0.64	0.84	0.74	0.53	0.65	0.68	0.55	0.50	0.49	0.30	0.39	0.14	0.31	0.43	0.57	0.54
	ERP3	0.52	0.50	0.36	0.51	0.50	0.47	0.23	0.61	<b>0.87</b>	0.56	0.55	0.71	0.64	0.49	0.54	0.61	0.56	0.52	0.47	0.25	0.51	0.07	0.27	0.43	0.48	0.39
	ERP4	0.53	0.58	0.34	0.41	0.46	0.46	0.17	0.50	<b>0.92</b>	0.64	0.58	0.76	0.71	0.58	0.65	0.68	0.63	0.59	0.52	0.31	0.38	0.20	0.34	0.42	0.59	0.44
Change Readiness	ERP5	0.50	0.57	0.32	0.31	0.48	0.46	0.27	0.36	<b>0.76</b>	0.61	0.52	0.59	0.58	0.45	0.55	0.67	0.60	0.56	0.49	0.33	0.25	0.25	0.31	0.35	0.49	0.35
	ERPC1	0.40	0.52	0.48	0.39	0.59	0.54	0.21	0.38	0.68	<b>0.86</b>	0.54	0.73	0.79	0.67	0.43	0.67	0.43	0.55	0.43	0.50	0.47	0.40	0.24	0.46	0.50	0.56
	ERPC2	0.26	0.39	0.44	0.38	0.48	0.51	0.20	0.36	0.63	<b>0.93</b>	0.40	0.63	0.77	0.61	0.33	0.68	0.37	0.47	0.41	0.37	0.38	0.36	0.24	0.33	0.37	0.42
	ERPC3	0.33	0.45	0.40	0.34	0.50	0.48	0.15	0.33	0.57	<b>0.88</b>	0.47	0.61	0.75	0.58	0.39	0.68	0.40	0.47	0.39	0.40	0.24	0.36	0.21	0.25	0.40	0.42
	ERPC4	0.28	0.48	0.46	0.37	0.56	0.56	0.13	0.33	0.68	<b>0.94</b>	0.50	0.69	0.81	0.63	0.38	0.72	0.41	0.51	0.44	0.41	0.32	0.34	0.24	0.34	0.46	0.42
Executive Commitment	ERPC5	0.38	0.49	0.37	0.33	0.53	0.56	0.14	0.29	0.65	<b>0.89</b>	0.57	0.64	0.80	0.61	0.46	0.72	0.44	0.53	0.41	0.50	0.32	0.37	0.21	0.36	0.51	0.50
	ERPE1	0.56	0.70	0.35	0.35	0.50	0.37	0.13	0.27	0.60	0.54	<b>0.86</b>	0.60	0.52	0.50	0.73	0.56	0.63	0.58	0.48	0.63	0.29	0.38	0.36	0.39	0.62	0.67
	ERPE2	0.65	0.77	0.31	0.41	0.61	0.49	0.27	0.42	0.63	0.48	<b>0.91</b>	0.59	0.55	0.48	0.78	0.60	0.70	0.65	0.45	0.59	0.37	0.26	0.37	0.44	0.68	0.65

Table 5.7 (Continued)

Construct	Items	B	CI	CMT	CT	EOC	EOI	EOP	EOR	ERPB	ERPC	ERPE	ERPI	ERPL	ERPP	ERPS	ERPT	HRM	IA	Inn	ML	OPC	OPF	OPI	OPL	SD	SP
IT Skills	ERPE3	0.70	0.74	0.31	0.48	0.57	0.47	0.40	0.54	0.57	0.41	<b>0.92</b>	0.49	0.49	0.53	0.79	0.50	0.70	0.63	0.46	0.57	0.48	0.28	0.38	0.48	0.69	0.68
	ERPE4	0.67	0.67	0.35	0.44	0.49	0.40	0.32	0.34	0.50	0.39	<b>0.91</b>	0.45	0.41	0.48	0.73	0.49	0.62	0.57	0.50	0.60	0.42	0.34	0.37	0.48	0.65	0.67
	ERPE5	0.42	0.61	0.50	0.53	0.70	0.55	0.36	0.50	0.52	0.56	<b>0.72</b>	0.51	0.55	0.79	0.61	0.42	0.49	0.58	0.47	0.55	0.43	0.46	0.30	0.47	0.68	0.57
	ERPI1	0.54	0.62	0.45	0.40	0.64	0.59	0.13	0.40	0.72	0.77	0.61	<b>0.84</b>	0.74	0.68	0.60	0.61	0.50	0.63	0.48	0.53	0.37	0.38	0.24	0.49	0.65	0.58
	ERPI2	0.50	0.46	0.24	0.21	0.32	0.43	0.06	0.24	0.71	0.57	0.42	<b>0.88</b>	0.68	0.45	0.56	0.64	0.48	0.51	0.45	0.30	0.23	0.15	0.33	0.41	0.49	0.48
	ERPI3	0.58	0.59	0.28	0.34	0.51	0.51	0.24	0.41	0.75	0.59	0.54	<b>0.89</b>	0.67	0.48	0.56	0.70	0.58	0.59	0.41	0.31	0.34	0.15	0.35	0.44	0.57	0.53
Learning	ERPI4	0.56	0.59	0.29	0.43	0.58	0.59	0.24	0.48	0.87	0.71	0.62	<b>0.93</b>	0.80	0.53	0.61	0.80	0.58	0.60	0.49	0.30	0.40	0.16	0.35	0.50	0.60	0.54
	ERPI5	0.39	0.43	0.30	0.29	0.34	0.42	0.14	0.32	0.79	0.57	0.46	<b>0.82</b>	0.70	0.49	0.56	0.68	0.44	0.44	0.52	0.25	0.25	0.16	0.34	0.39	0.47	0.42
	ERPL1	0.44	0.43	0.23	0.30	0.39	0.46	0.13	0.34	0.69	0.60	0.48	0.73	<b>0.78</b>	0.47	0.54	0.74	0.47	0.51	0.37	0.27	0.29	0.14	0.24	0.37	0.50	0.49
	ERPL2	0.49	0.54	0.23	0.23	0.52	0.39	0.08	0.32	0.77	0.60	0.57	0.76	<b>0.81</b>	0.44	0.57	0.68	0.58	0.57	0.38	0.31	0.31	0.13	0.29	0.44	0.59	0.45
	ERPL3	0.34	0.47	0.32	0.31	0.51	0.49	0.09	0.32	0.66	0.84	0.49	0.64	<b>0.85</b>	0.57	0.44	0.68	0.41	0.46	0.35	0.41	0.29	0.41	0.16	0.32	0.41	0.40
Project Management	ERPL4	0.38	0.44	0.26	0.28	0.51	0.57	0.11	0.30	0.62	0.80	0.44	0.67	<b>0.89</b>	0.59	0.40	0.64	0.39	0.46	0.29	0.32	0.26	0.24	0.09	0.28	0.45	0.42
	ERPL5	0.42	0.47	0.30	0.28	0.50	0.56	0.14	0.25	0.60	0.78	0.45	0.65	<b>0.84</b>	0.53	0.39	0.60	0.38	0.53	0.29	0.34	0.25	0.20	0.05	0.26	0.49	0.41
	ERPP1	0.36	0.48	0.65	0.40	0.59	0.43	0.36	0.39	0.55	0.59	0.52	0.59	0.55	<b>0.90</b>	0.43	0.37	0.47	0.54	0.60	0.59	0.44	0.46	0.43	0.54	0.59	0.56
	ERPP2	0.44	0.55	0.57	0.39	0.59	0.45	0.45	0.37	0.49	0.61	0.56	0.54	0.56	<b>0.90</b>	0.45	0.41	0.51	0.58	0.55	0.60	0.41	0.49	0.42	0.54	0.64	0.61
	ERPP3	0.43	0.51	0.49	0.51	0.60	0.49	0.33	0.53	0.56	0.66	0.64	0.56	0.64	<b>0.90</b>	0.52	0.43	0.42	0.50	0.48	0.54	0.50	0.48	0.33	0.53	0.60	0.58
Strategic IT Planning	ERPP4	0.46	0.54	0.55	0.49	0.65	0.56	0.43	0.54	0.55	0.61	0.59	0.54	0.54	<b>0.89</b>	0.49	0.41	0.55	0.59	0.52	0.55	0.53	0.51	0.36	0.52	0.59	0.54
	ERPP5	0.36	0.51	0.64	0.45	0.52	0.52	0.38	0.37	0.44	0.53	0.47	0.40	0.41	<b>0.75</b>	0.43	0.42	0.49	0.56	0.58	0.50	0.40	0.56	0.35	0.45	0.48	0.37
	ERPS1	0.70	0.67	0.19	0.39	0.49	0.50	0.31	0.50	0.63	0.44	0.73	0.58	0.52	0.49	<b>0.84</b>	0.53	0.63	0.57	0.38	0.44	0.35	0.18	0.28	0.39	0.62	0.58
	ERPS2	0.70	0.71	0.34	0.45	0.54	0.52	0.30	0.52	0.65	0.37	0.76	0.63	0.51	0.52	<b>0.89</b>	0.52	0.70	0.66	0.52	0.48	0.38	0.19	0.34	0.46	0.72	0.59
	ERPS3	0.68	0.69	0.27	0.28	0.43	0.43	0.18	0.32	0.56	0.30	0.69	0.54	0.44	0.41	<b>0.90</b>	0.42	0.67	0.63	0.45	0.54	0.14	0.24	0.29	0.34	0.67	0.60
Training	ERPS4	0.70	0.72	0.34	0.36	0.43	0.39	0.24	0.35	0.65	0.43	0.77	0.60	0.52	0.50	<b>0.90</b>	0.54	0.74	0.73	0.50	0.52	0.22	0.25	0.31	0.37	0.72	0.63
	ERPS5	0.67	0.74	0.30	0.25	0.47	0.43	0.17	0.24	0.54	0.39	0.76	0.56	0.48	0.42	<b>0.86</b>	0.57	0.66	0.64	0.50	0.55	0.11	0.25	0.30	0.35	0.65	0.60
	ERPT1	0.37	0.47	0.28	0.28	0.41	0.39	0.14	0.22	0.67	0.69	0.48	0.71	0.67	0.38	0.46	<b>0.83</b>	0.42	0.51	0.39	0.30	0.20	0.17	0.28	0.38	0.48	0.48
	ERPT2	0.35	0.43	0.33	0.41	0.39	0.48	0.22	0.38	0.59	0.59	0.47	0.53	0.58	0.36	0.41	<b>0.77</b>	0.45	0.40	0.47	0.21	0.30	0.15	0.31	0.30	0.34	0.27
	ERPT3	0.42	0.46	0.30	0.38	0.41	0.47	0.26	0.35	0.59	0.62	0.50	0.57	0.61	0.36	0.50	<b>0.85</b>	0.46	0.47	0.41	0.22	0.26	0.12	0.29	0.33	0.41	0.32
HRM	ERPT4	0.42	0.41	0.16	0.24	0.37	0.39	0.16	0.22	0.68	0.68	0.44	0.68	0.72	0.38	0.48	<b>0.85</b>	0.43	0.49	0.31	0.23	0.22	0.16	0.19	0.34	0.46	0.38
	ERPT5	0.53	0.54	0.24	0.29	0.49	0.51	0.19	0.33	0.68	0.57	0.55	0.72	0.69	0.44	0.55	<b>0.80</b>	0.54	0.57	0.42	0.27	0.22	0.10	0.26	0.40	0.55	0.42
	HRE1	0.65	0.71	0.28	0.28	0.48	0.44	0.32	0.35	0.52	0.24	0.58	0.48	0.34	0.40	0.66	0.45	<b>0.86</b>	0.71	0.48	0.31	0.15	0.13	0.43	0.27	0.66	0.38
	HRE2	0.67	0.77	0.46	0.46	0.57	0.51	0.21	0.46	0.64	0.54	0.67	0.60	0.55	0.52	0.74	0.51	<b>0.78</b>	0.72	0.58	0.57	0.34	0.29	0.35	0.34	0.65	0.56
	HRE3	0.61	0.74	0.43	0.29	0.53	0.47	0.29	0.30	0.50	0.43	0.58	0.54	0.47	0.56	0.63	0.45	<b>0.79</b>	0.81	0.44	0.46	0.28	0.34	0.43	0.40	0.74	0.52
	HRI1	0.67	0.67	0.42	0.41	0.44	0.39	0.48	0.50	0.48	0.34	0.63	0.37	0.36	0.58	0.65	0.37	<b>0.79</b>	0.61	0.61	0.52	0.34	0.25	0.55	0.36	0.61	0.58
	HRI2	0.71	0.73	0.35	0.31	0.46	0.41	0.29	0.36	0.53	0.35	0.65	0.45	0.44	0.51	0.64	0.43	<b>0.84</b>	0.68	0.56	0.45	0.29	0.23	0.48	0.34	0.69	0.51
	HRI3	0.79	0.76	0.40	0.36	0.49	0.48	0.25	0.41	0.62	0.43	0.61	0.61	0.55	0.48	0.68	0.52	<b>0.89</b>	0.75	0.57	0.48	0.35	0.21	0.50	0.37	0.70	0.55
	HRT2	0.56	0.64	0.27	0.30	0.44	0.39	0.42	0.31	0.42	0.28	0.58	0.37	0.28	0.35	0.54	0.45	<b>0.78</b>	0.66	0.44	0.28	0.25	0.26	0.50	0.32	0.63	0.41
	HRT3	0.66	0.71	0.32	0.36	0.46	0.39	0.28	0.42	0.63	0.38	0.62	0.49	0.48	0.41	0.63	0.50	<b>0.91</b>	0.69	0.52	0.37	0.32	0.20	0.47	0.32	0.65	0.42
HRTI	0.70	0.74	0.31	0.36	0.45	0.46	0.24	0.39	0.58	0.40	0.54	0.52	0.52	0.33	0.62	0.53	<b>0.86</b>	0.70	0.49	0.34	0.24	0.15	0.44	0.23	0.64	0.46	
Information and Analysis	IA1	0.57	0.68	0.57	0.52	0.53	0.57	0.45	0.44	0.51	0.49	0.54	0.54	0.40	0.55	0.56	0.56	0.67	<b>0.80</b>	0.58	0.46	0.39	0.35	0.56	0.53	0.67	0.54
	IA2	0.76	0.78	0.47	0.47	0.50	0.54	0.33	0.37	0.55	0.47	0.61	0.56	0.53	0.47	0.67	0.56	0.75	<b>0.91</b>	0.54	0.52	0.31	0.30	0.37	0.33	0.76	0.61
	IA3	0.74	0.75	0.44	0.36	0.51	0.52	0.35	0.38	0.46	0.36	0.55	0.45	0.49	0.54	0.64	0.35	0.73	<b>0.85</b>	0.48	0.49	0.31	0.27	0.35	0.36	0.78	0.55
	IA4	0.71	0.81	0.42	0.32	0.52	0.51	0.22	0.25	0.55	0.49	0.60	0.55	0.57	0.52	0.67	0.53	0.75	<b>0.89</b>	0.49	0.49	0.21	0.36	0.35	0.41	0.79	0.52
	IA5	0.68	0.83	0.54	0.48	0.60	0.58	0.30	0.38	0.63	0.63	0.73	0.66	0.63	0.68	0.65	0.62	0.77	<b>0.90</b>	0.60	0.53	0.40	0.43	0.48	0.51	0.81	0.63

Table 5.7 (Continued)

Construct	Items	B	CI	CMT	CT	EOC	EOI	EOP	EOR	ERP	ERPC	ERPE	ERPI	ERPL	ERPP	ERPS	ERPT	HRM	IA	Inn	ML	OPC	OPF	OPI	OPL	SD	SP
Innovation	EXI1	0.45	0.54	0.71	0.58	0.47	0.46	0.46	0.43	0.52	0.43	0.50	0.52	0.37	0.61	0.47	0.46	0.59	0.53	<b>0.88</b>	0.49	0.57	0.50	0.71	0.62	0.49	0.51
	EXI2	0.49	0.54	0.73	0.65	0.43	0.50	0.40	0.38	0.48	0.36	0.48	0.44	0.32	0.53	0.50	0.39	0.54	0.56	<b>0.91</b>	0.48	0.47	0.50	0.59	0.60	0.50	0.47
	EXI3	0.52	0.62	0.71	0.65	0.42	0.52	0.33	0.36	0.53	0.46	0.49	0.49	0.41	0.55	0.48	0.47	0.57	0.58	<b>0.91</b>	0.46	0.46	0.44	0.56	0.57	0.48	0.49
Management Leadership	ML1	0.53	0.68	0.60	0.34	0.52	0.37	0.28	0.28	0.36	0.46	0.67	0.41	0.39	0.59	0.60	0.33	0.53	0.59	0.54	<b>0.92</b>	0.34	0.47	0.36	0.48	0.62	0.73
	ML2	0.48	0.53	0.53	0.29	0.37	0.33	0.21	0.20	0.20	0.32	0.54	0.27	0.26	0.52	0.47	0.14	0.41	0.46	0.43	<b>0.89</b>	0.30	0.53	0.32	0.41	0.49	0.72
	ML3	0.49	0.58	0.65	0.44	0.53	0.38	0.24	0.35	0.36	0.51	0.66	0.38	0.41	0.62	0.53	0.34	0.45	0.51	0.50	<b>0.94</b>	0.46	0.47	0.27	0.44	0.51	0.75
	ML4	0.46	0.60	0.62	0.40	0.56	0.43	0.23	0.37	0.35	0.50	0.63	0.37	0.40	0.60	0.50	0.29	0.48	0.53	0.47	<b>0.92</b>	0.44	0.49	0.24	0.39	0.49	0.72
Customer	OPC4	0.17	0.25	0.59	0.61	0.40	0.30	0.30	0.47	0.33	0.43	0.37	0.27	0.33	0.47	0.16	0.19	0.18	0.28	0.44	0.43	<b>0.80</b>	0.41	0.23	0.46	0.21	0.41
	OPC5	0.10	0.14	0.51	0.48	0.33	0.21	0.35	0.46	0.30	0.29	0.22	0.25	0.22	0.45	0.06	0.11	0.18	0.17	0.40	0.33	<b>0.82</b>	0.31	0.39	0.53	0.17	0.37
	OPC6	0.36	0.33	0.42	0.62	0.34	0.33	0.35	0.49	0.37	0.21	0.44	0.32	0.29	0.31	0.28	0.30	0.29	0.30	0.49	0.26	<b>0.83</b>	0.34	0.44	0.62	0.33	0.41
Financial	OPC7	0.35	0.40	0.46	0.61	0.49	0.38	0.56	0.57	0.35	0.33	0.43	0.33	0.26	0.48	0.36	0.32	0.43	0.42	0.45	0.35	<b>0.78</b>	0.51	0.49	0.63	0.37	0.40
	OPF1	0.14	0.34	0.63	0.49	0.45	0.31	0.42	0.27	0.15	0.33	0.32	0.19	0.18	0.46	0.18	0.12	0.23	0.36	0.48	0.52	<b>0.57</b>	<b>0.87</b>	0.53	0.57	0.32	0.45
	OPF2	0.06	0.22	0.37	0.24	0.19	0.12	0.10	-0.01	0.16	0.29	0.29	0.19	0.23	0.44	0.20	0.15	0.18	0.23	0.37	0.30	0.20	<b>0.74</b>	0.28	0.24	0.23	0.23
Internal Process	OPF3	0.22	0.31	0.41	0.30	0.33	0.27	0.26	0.07	0.12	0.35	0.34	0.18	0.26	0.47	0.24	0.16	0.25	0.33	0.39	0.39	0.29	<b>0.76</b>	0.27	0.35	0.29	0.32
	OPI10	0.23	0.34	0.48	0.47	0.31	0.24	0.45	0.34	0.17	0.11	0.34	0.19	0.05	0.34	0.21	0.26	0.40	0.35	0.50	0.21	0.35	0.39	<b>0.79</b>	0.48	0.35	0.40
	OPI11	0.26	0.44	0.43	0.37	0.36	0.30	0.40	0.27	0.37	0.30	0.42	0.37	0.27	0.40	0.34	0.36	0.45	0.36	0.61	0.29	0.33	0.48	<b>0.72</b>	0.55	0.35	0.32
Learning and Growth	OPI8	0.23	0.34	0.38	0.29	0.28	0.25	0.38	0.28	0.27	0.17	0.26	0.29	0.14	0.30	0.22	0.19	0.41	0.38	0.48	0.17	0.44	0.37	<b>0.82</b>	0.56	0.40	0.29
	OPI9	0.35	0.46	0.59	0.45	0.25	0.23	0.40	0.42	0.31	0.22	0.29	0.31	0.17	0.33	0.32	0.22	0.50	0.43	0.60	0.36	0.43	0.30	<b>0.82</b>	0.47	0.41	0.50
	OPL12	0.30	0.41	0.48	0.57	0.48	0.49	0.43	0.54	0.51	0.46	0.48	0.48	0.44	0.55	0.43	0.48	0.31	0.40	0.54	0.38	0.59	0.48	0.52	<b>0.77</b>	0.43	0.44
	OPL13	0.19	0.27	0.51	0.43	0.39	0.32	0.45	0.27	0.26	0.28	0.30	0.29	0.21	0.49	0.20	0.26	0.27	0.33	0.49	0.34	0.59	0.49	0.54	<b>0.80</b>	0.36	0.32
Service Design	OPL14	0.51	0.47	0.37	0.42	0.42	0.37	0.35	0.40	0.48	0.31	0.47	0.57	0.44	0.40	0.44	0.44	0.42	0.46	0.51	0.33	0.46	0.17	0.45	<b>0.75</b>	0.48	0.44
	OPL15	0.32	0.41	0.59	0.53	0.49	0.41	0.50	0.42	0.29	0.21	0.44	0.35	0.24	0.45	0.35	0.23	0.29	0.40	0.57	0.45	0.59	0.50	0.58	<b>0.87</b>	0.44	0.45
	SD1	0.71	0.73	0.47	0.39	0.49	0.50	0.30	0.36	0.55	0.42	0.62	0.59	0.52	0.61	0.69	0.48	0.70	0.82	0.51	0.51	0.27	0.28	0.39	0.43	<b>0.89</b>	0.63
Strategic Planning	SD2	0.69	0.77	0.41	0.40	0.59	0.56	0.31	0.36	0.59	0.47	0.73	0.60	0.58	0.62	0.69	0.50	0.71	0.79	0.49	0.49	0.36	0.32	0.42	0.52	<b>0.94</b>	0.60
	SD3	0.72	0.78	0.42	0.37	0.55	0.44	0.30	0.34	0.55	0.47	0.74	0.56	0.50	0.58	0.71	0.52	0.77	0.78	0.49	0.57	0.30	0.38	0.49	0.49	<b>0.89</b>	0.61
	SP1	0.48	0.52	0.49	0.34	0.32	0.28	0.18	0.32	0.30	0.33	0.52	0.39	0.36	0.46	0.48	0.27	0.43	0.50	0.36	0.66	0.36	0.35	0.35	0.38	0.53	<b>0.84</b>
	SP2	0.52	0.62	0.50	0.39	0.41	0.31	0.21	0.27	0.49	0.54	0.69	0.52	0.53	0.49	0.57	0.47	0.49	0.57	0.48	0.75	0.41	0.43	0.41	0.45	0.59	<b>0.88</b>
Strategic Planning	SP3	0.60	0.65	0.52	0.56	0.55	0.51	0.32	0.53	0.56	0.46	0.74	0.60	0.48	0.57	0.69	0.43	0.56	0.58	0.57	0.70	0.55	0.32	0.45	0.52	0.62	<b>0.89</b>
	SP4	0.60	0.63	0.48	0.51	0.54	0.52	0.40	0.45	0.42	0.46	0.64	0.51	0.43	0.60	0.61	0.41	0.55	0.63	0.47	0.64	0.39	0.44	0.42	0.41	0.59	<b>0.85</b>

Table 5.8  
*Significance of the Factor Loadings*

Construct	Items	Loadings	Standard Error	T Value	P Value
<b>Benchmarking</b>	B1	0.876	0.015	58.661	0.000
	B2	0.920	0.010	90.916	0.000
	B3	0.913	0.011	84.065	0.000
<b>Continuous Improvement</b>	CI1	0.901	0.012	75.866	0.000
	CI2	0.925	0.007	135.417	0.000
	CI3	0.868	0.020	44.283	0.000
	CI4	0.875	0.015	56.486	0.000
<b>People Commitment</b>	EXP1	0.853	0.027	28.631	0.000
	EXP2	0.862	0.015	59.990	0.000
	EXP3	0.838	0.032	22.074	0.000
	EXP4	0.802	0.056	10.472	0.000
<b>Customer Focus</b>	EXC1	0.928	0.033	23.587	0.000
	EXC2	0.951	0.032	23.614	0.000
	EXC3	0.933	0.026	29.714	0.000
<b>Entrepreneurial Culture</b>	EOC1	0.769	0.017	53.040	0.000
	EOC2	0.873	0.011	81.650	0.000
	EOC3	0.703	0.032	24.388	0.000
	EOC4	0.591	0.021	41.151	0.000
	EOC5	0.778	0.012	72.441	0.000
	EOC6	0.746	0.037	21.648	0.000
	EOC7	0.774	0.017	54.308	0.000
<b>Innovativeness</b>	EOI1	0.880	0.029	28.131	0.000
	EOI2	0.901	0.017	48.840	0.000
	EOI3	0.769	0.013	66.439	0.000
<b>Proactiveness</b>	EOP2	0.867	0.016	53.058	0.000
	EOP3	0.896	0.011	82.314	0.000
<b>Risk-Taking</b>	EOR1	0.796	0.030	25.517	0.000
	EOR2	0.909	0.019	44.966	0.000
	EOR3	0.811	0.013	70.383	0.000
<b>Business Process Skills</b>	ERPB1	0.852	0.013	70.339	0.000
	ERPB2	0.877	0.007	142.661	0.000
	ERPB3	0.873	0.013	69.167	0.000
	ERPB4	0.918	0.021	40.191	0.000
	ERPB5	0.762	0.012	78.328	0.000
<b>Change Readiness</b>	ERPC1	0.861	0.009	101.374	0.000
	ERPC2	0.932	0.014	67.358	0.000
	ERPC3	0.880	0.031	23.278	0.000
	ERPC4	0.942	0.022	37.971	0.000
	ERPC5	0.888	0.014	60.751	0.000

Table 5.8 (Continued)

<b>Construct</b>	<b>Items</b>	<b>Loadings</b>	<b>Standard Error</b>	<b>T Value</b>	<b>P Value</b>
<b>Executive Commitment</b>	ERPE1	0.861	0.015	59.112	0.000
	ERPE2	0.908	0.008	115.450	0.000
	ERPE3	0.925	0.031	26.210	0.000
	ERPE4	0.910	0.025	30.856	0.000
	ERPE5	0.716	0.027	29.721	0.000
<b>IT Skills</b>	ERPI1	0.839	0.014	59.089	0.000
	ERPI2	0.881	0.011	80.606	0.000
	ERPI3	0.890	0.021	40.157	0.000
	ERPI4	0.934	0.013	69.584	0.000
	ERPI5	0.819	0.012	76.583	0.000
<b>Learning</b>	ERPL1	0.777	0.014	63.813	0.000
	ERPL2	0.810	0.013	68.645	0.000
	ERPL3	0.852	0.033	22.633	0.000
	ERPL4	0.895	0.015	56.200	0.000
	ERPL5	0.842	0.012	74.781	0.000
<b>Project Management</b>	ERPP1	0.903	0.012	74.807	0.000
	ERPP2	0.905	0.013	67.645	0.000
	ERPP3	0.896	0.018	49.056	0.000
	ERPP4	0.895	0.020	40.655	0.000
	ERPP5	0.754	0.033	23.326	0.000
<b>Strategic IT Planning</b>	ERPS1	0.841	0.015	55.569	0.000
	ERPS2	0.887	0.017	50.419	0.000
	ERPS3	0.900	0.021	37.479	0.000
	ERPS4	0.904	0.010	88.763	0.000
	ERPS5	0.862	0.008	118.623	0.000
<b>Training</b>	ERPT1	0.825	0.009	99.794	0.000
	ERPT2	0.766	0.012	71.871	0.000
	ERPT3	0.850	0.014	65.861	0.000
	ERPT4	0.847	0.013	70.527	0.000
	ERPT5	0.804	0.017	49.727	0.000
<b>HRM</b>	HRE1	0.862	0.020	42.869	0.000
	HRE2	0.784	0.026	31.655	0.000
	HRE3	0.785	0.030	26.397	0.000
	HRI1	0.794	0.014	59.856	0.000
	HRI2	0.844	0.019	40.853	0.000
	HRI3	0.889	0.020	39.904	0.000
	HRT2	0.777	0.028	28.778	0.000
HRT3	0.905	0.020	42.420	0.000	
	HRTI	0.860	0.012	73.658	0.000

Table 5.8 (Continued)

<b>Construct</b>	<b>Items</b>	<b>Loadings</b>	<b>Standard Error</b>	<b>T Value</b>	<b>P Value</b>
<b>Information and Analysis</b>	IA1	0.800	0.027	28.369	0.000
	IA2	0.911	0.011	79.366	0.000
	IA3	0.850	0.015	57.450	0.000
	IA4	0.888	0.024	33.441	0.000
	IA5	0.901	0.011	80.641	0.000
<b>Innovation</b>	EXI1	0.884	0.022	38.472	0.000
	EXI2	0.908	0.013	68.022	0.000
	EXI3	0.910	0.010	88.484	0.000
<b>Management Leadership</b>	ML1	0.924	0.010	96.607	0.000
	ML2	0.893	0.016	54.424	0.000
	ML3	0.937	0.009	105.557	0.000
	ML4	0.920	0.011	80.817	0.000
<b>Customer</b>	OPC4	0.799	0.010	89.432	0.000
	OPC5	0.824	0.019	41.107	0.000
	OPC6	0.830	0.034	21.036	0.000
	OPC7	0.777	0.028	27.960	0.000
<b>Financial</b>	OPF1	0.866	0.019	42.387	0.000
	OPF2	0.739	0.026	28.940	0.000
	OPF3	0.761	0.012	69.817	0.000
<b>Internal Process</b>	OPI10	0.794	0.041	17.933	0.000
	OPI11	0.719	0.045	16.964	0.000
	OPI8	0.822	0.031	25.918	0.000
	OPI9	0.823	0.020	41.513	0.000
<b>Learning and Growth</b>	OPL12	0.771	0.023	36.389	0.000
	OPL13	0.803	0.021	36.759	0.000
	OPL14	0.754	0.019	43.643	0.000
	OPL15	0.869	0.019	42.458	0.000
<b>Service Design</b>	SD1	0.892	0.014	64.240	0.000
	SD2	0.943	0.007	137.988	0.000
	SD3	0.890	0.009	103.992	0.000
<b>Strategic Planning</b>	SP1	0.842	0.019	44.404	0.000
	SP2	0.884	0.014	62.757	0.000
	SP3	0.893	0.011	80.290	0.000
	SP4	0.846	0.014	58.601	0.000

#### **5.6.1.1.2 The Convergent Validity Analysis**

The convergent validity is the degree to which a group of variables converge in measuring a specific concept (Hair *et al.*, 2010). As suggested by Hair *et al.* (2010), to establish the convergent validity, three criteria should be tested simultaneously, namely the factor loadings, composite reliability (CR), and average variance extracted (AVE). Hence, the loading of all items were examined where all items have loading more than 0.7 which is an acceptable level according to the multivariate analysis literature (Hair *et al.*, 2010). Table 5.5 indicates that all the factors' loading were significant at the 0.01 level of significance. The second criterion to test convergent validity is the composite reliability which refers the degree to which a set of items consistently indicate the latent construct (Hair *et al.*, 2010). In Table 5.7, the values of Cronbach Alpha and Composite Reliability were examined. The values of Cronbach Alpha ranged from 0.715 to 0.945 and the Composite Reliability ranged from 0.883 to 0.956 which exceeds the recommended level of 0.7 (Fornell & Larcker, 1981; Hair *et al.*, 2010). Therefore, these results confirm the convergent validity of the outer model. Furthermore, the values of the average variance extracted (AVE) were examined to confirm the convergent validity of the outer model. AVE reflects the average of variance extracted among a group of items in relation to the variance shared with the errors of measurement. In other words, AVE measures the variance captured by indicators in relation to the variance assignable to the measurement errors. Hence, if the value of AVE is at least 0.5, so these set of items have an adequate convergence in measuring the concern construct (Barclay *et al.*, 1995). In the study, AVE values range between 0.565 and 0.878 that indicate a good level of construct validity of the measures used (Barclay *et al.*, 1995).

Table 5.9  
*The Convergent Validity Analysis*

<b>Construct</b>	<b>Items</b>	<b>Loadings</b>	<b>Cronbach's Alpha</b>	<b>CR<sup>a</sup></b>	<b>AVE<sup>b</sup></b>
<b>Benchmarking</b>	B1	0.876	0.887	0.930	0.816
	B2	0.920			
	B3	0.913			
<b>Continuous Improvement</b>	CI1	0.901	0.915	0.940	0.797
	CI2	0.925			
	CI3	0.868			
	CI4	0.875			
<b>People Commitment</b>	EXP1	0.853	0.860	0.905	0.704
	EXP2	0.862			
	EXP3	0.838			
	EXP4	0.802			
<b>Customer Focus</b>	EXC1	0.928	0.930	0.956	0.878
	EXC2	0.951			
	EXC3	0.933			
<b>Entrepreneurial Culture</b>	EOC1	0.769	0.870	0.900	0.565
	EOC2	0.873			
	EOC3	0.703			
	EOC4	0.591			
	EOC5	0.778			
	EOC6	0.746			
	EOC7	0.774			
<b>Innovativeness</b>	EOI1	0.880	0.810	0.888	0.726
	EOI2	0.901			
	EOI3	0.769			
<b>Proactiveness</b>	EOP2	0.867	0.715	0.875	0.777
	EOP3	0.896			
<b>Risk-Taking</b>	EOR1	0.796	0.790	0.878	0.706
	EOR2	0.909			
	EOR3	0.811			
<b>Business Process Skills</b>	ERP B1	0.852	0.909	0.933	0.736
	ERP B2	0.877			
	ERP B3	0.873			
	ERP B4	0.918			
	ERP B5	0.762			
<b>Change Readiness</b>	ERPC1	0.861	0.942	0.956	0.812
	ERPC2	0.932			
	ERPC3	0.880			
	ERPC4	0.942			
	ERPC5	0.888			

Table 5.9 (Continued)

<b>Construct</b>	<b>Items</b>	<b>Loadings</b>	<b>Cronbach's Alpha</b>	<b>CR<sup>a</sup></b>	<b>AVE<sup>b</sup></b>
<b>Executive Commitment</b>	ERPE1	0.861	0.915	0.938	0.752
	ERPE2	0.908			
	ERPE3	0.925			
	ERPE4	0.910			
	ERPE5	0.716			
<b>IT Skills</b>	ERPI1	0.839	0.922	0.941	0.763
	ERPI2	0.881			
	ERPI3	0.890			
	ERPI4	0.934			
	ERPI5	0.819			
<b>Learning</b>	ERPL1	0.777	0.892	0.921	0.699
	ERPL2	0.810			
	ERPL3	0.852			
	ERPL4	0.895			
	ERPL5	0.842			
<b>Project Management</b>	ERPP1	0.903	0.920	0.941	0.761
	ERPP2	0.905			
	ERPP3	0.896			
	ERPP4	0.895			
	ERPP5	0.754			
<b>Strategic IT Planning</b>	ERPS1	0.841	0.926	0.944	0.773
	ERPS2	0.887			
	ERPS3	0.900			
	ERPS4	0.904			
	ERPS5	0.862			
<b>Training</b>	ERPT1	0.825	0.877	0.911	0.671
	ERPT2	0.766			
	ERPT3	0.850			
	ERPT4	0.847			
	ERPT5	0.804			
<b>HRM</b>	HRE1	0.862	0.945	0.954	0.696
	HRE2	0.784			
	HRE3	0.785			
	HRI1	0.794			
	HRI2	0.844			
	HRI3	0.889			
	HRT2	0.777			
HRT3	0.905				
	HRTI	0.860			

Table 5.9 (Continued)

Construct	Items	Loadings	Cronbach's Alpha	CR <sup>a</sup>	AVE <sup>b</sup>
<b>Information and Analysis</b>	IA1	0.800	0.920	0.940	0.758
	IA2	0.911			
	IA3	0.850			
	IA4	0.888			
	IA5	0.901			
<b>Innovation</b>	EXI1	0.884	0.883	0.928	0.811
	EXI2	0.908			
	EXI3	0.910			
<b>Management Leadership</b>	ML1	0.924	0.938	0.956	0.844
	ML2	0.893			
	ML3	0.937			
	ML4	0.920			
<b>Customer</b>	OPC4	0.799	0.823	0.882	0.653
	OPC5	0.824			
	OPC6	0.830			
<b>Financial</b>	OPC7	0.777	0.715	0.833	0.625
	OPF1	0.866			
	OPF2	0.739			
<b>Internal Process</b>	OPF3	0.761	0.799	0.869	0.625
	OPI10	0.794			
	OPI11	0.719			
	OPI8	0.822			
<b>Learning and Growth</b>	OPI9	0.823	0.813	0.877	0.641
	OPL12	0.771			
	OPL13	0.803			
	OPL14	0.754			
	OPL15	0.869			
<b>Service Design</b>	SD1	0.892	0.894	0.934	0.826
	SD2	0.943			
	SD3	0.890			
<b>Strategic Planning</b>	SP1	0.842	0.889	0.923	0.751
	SP2	0.884			
	SP3	0.893			
	SP4	0.846			

CR =  $(\sum \text{factor loading})^2 / \{(\sum \text{factor loading})^2 + \sum (\text{variance of error})\}$

AVE =  $\sum (\text{factor loading})^2 / \{\sum (\text{factor loading})^2 + \sum (\text{variance of error})\}$

### **5.6.1.1.3 The Discriminant Validity Analysis**

For more confirmation about construct validity of the outer model, it is very important to establish the discriminant validity. Therefore, before testing the hypotheses through the path analysis, discriminant validity testing is a mandatory. Its measures show the degree to which items differentiate among constructs. In other words, the discriminant validity shows that items used different constructs do not overlap. In addition, the discriminant validity of the measures shared variance between each construct and, therefore, should be greater than the variance shared among distinct constructs (Compeau, Higgins, & Huff, 1999). For the purpose of this study, the discriminant validity of the measures was confirmed by employing the method of Fornell and Larcker (1981). As explained in Table 5.8, the square root of AVE for all constructs was replaced at the diagonal elements of the correlation matrix. The discriminant validity of the outer model for this study was confirmed where the diagonal elements in the table were higher than the other elements of the column and row in which they are located. As a result of the above testing for construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be reliable and valid.

Table 5.10  
The Discriminant Validity Matrix

Construct	B	CI	CMT	CR	EOC	EOI	EOP	EOR	ERP	ERPB	ERPC	ERPE	ERPI	ERPL	ERPP	ERPS	ERPT	HRI	IA	Inn	ML	OPC	OPF	OPI	OPL	SD	SP
<b>B</b>	<b>0.90</b>																										
<b>CI</b>	0.84	<b>0.89</b>																									
<b>Commitment</b>	0.35	0.50	<b>0.84</b>																								
<b>Customer</b>	0.42	0.46	0.72	<b>0.94</b>																							
<b>EOC</b>	0.45	0.65	0.55	0.52	<b>0.75</b>																						
<b>EOI</b>	0.54	0.65	0.45	0.48	0.69	<b>0.85</b>																					
<b>EOP</b>	0.30	0.36	0.45	0.50	0.52	0.39	<b>0.88</b>																				
<b>EOR</b>	0.44	0.45	0.48	0.72	0.63	0.45	0.58	<b>0.84</b>																			
<b>ERP</b>	0.60	0.63	0.36	0.44	0.54	0.53	0.22	0.53	<b>0.86</b>																		
<b>ERPB</b>	0.37	0.52	0.48	0.40	0.59	0.59	0.19	0.38	0.71	<b>0.90</b>																	
<b>ERPC</b>	0.70	0.81	0.42	0.51	0.67	0.53	0.34	0.48	0.66	0.55	<b>0.87</b>																
<b>ERPE</b>	0.59	0.62	0.36	0.39	0.56	0.59	0.19	0.43	0.79	0.74	0.61	<b>0.87</b>															
<b>ERPI</b>	0.50	0.56	0.32	0.34	0.58	0.59	0.13	0.37	0.80	0.83	0.59	0.83	<b>0.84</b>														
<b>ERPL</b>	0.47	0.59	0.66	0.51	0.68	0.56	0.45	0.51	0.60	0.69	0.64	0.61	0.62	<b>0.87</b>													
<b>ERPP</b>	0.79	0.81	0.33	0.40	0.54	0.52	0.28	0.44	0.69	0.44	0.84	0.66	0.56	0.53	<b>0.88</b>												
<b>ERPS</b>	0.51	0.57	0.32	0.39	0.51	0.55	0.24	0.36	0.78	0.77	0.60	0.79	0.80	0.47	0.59	<b>0.82</b>											
<b>ERPT</b>	0.81	0.81	0.43	0.42	0.58	0.53	0.37	0.47	0.66	0.46	0.73	0.60	0.54	0.56	0.77	0.56	<b>0.83</b>										
<b>HRI</b>	0.80	0.86	0.56	0.49	0.61	0.63	0.38	0.41	0.62	0.56	0.70	0.64	0.60	0.63	0.74	0.60	0.81	<b>0.87</b>									
<b>IA</b>	0.54	0.63	0.79	0.69	0.49	0.55	0.44	0.44	0.57	0.46	0.54	0.54	0.41	0.62	0.54	0.49	0.63	0.62	<b>0.90</b>								
<b>Innovation</b>	0.53	0.65	0.65	0.40	0.54	0.41	0.26	0.33	0.35	0.49	0.68	0.39	0.40	0.64	0.58	0.30	0.51	0.57	0.53	<b>0.92</b>							
<b>ML</b>	0.31	0.36	0.61	0.72	0.48	0.38	0.49	0.62	0.42	0.39	0.46	0.37	0.34	0.53	0.28	0.29	0.34	0.37	0.55	0.42	<b>0.81</b>						
<b>OPC</b>	0.18	0.38	0.62	0.46	0.43	0.31	0.36	0.18	0.18	0.40	0.40	0.23	0.27	0.57	0.25	0.17	0.28	0.39	0.53	0.53	0.49	<b>0.79</b>					
<b>OPF</b>	0.34	0.50	0.59	0.50	0.38	0.32	0.51	0.41	0.36	0.25	0.41	0.37	0.20	0.43	0.35	0.32	0.55	0.48	0.69	0.33	0.49	0.49	<b>0.79</b>				
<b>OPI</b>	0.40	0.48	0.62	0.61	0.56	0.49	0.55	0.51	0.47	0.39	0.52	0.51	0.40	0.59	0.43	0.43	0.39	0.49	0.66	0.47	0.70	0.53	0.65	<b>0.80</b>			
<b>OPL</b>	0.78	0.83	0.47	0.43	0.60	0.55	0.34	0.39	0.62	0.50	0.77	0.64	0.59	0.66	0.77	0.55	0.80	0.86	0.55	0.58	0.34	0.36	0.48	0.53	<b>0.91</b>		
<b>SD</b>	0.64	0.70	0.57	0.52	0.53	0.47	0.32	0.46	0.52	0.52	0.75	0.59	0.52	0.62	0.68	0.46	0.59	0.66	0.55	0.79	0.50	0.44	0.48	0.51	0.68	<b>0.87</b>	

### 5.6.2 The First-Order and Second-Order Constructs

Before going further towards examining the conceptual and theoretical aspect of the second order constructs of the model, the differences between the first and second order measurement models have been explained as discussed in the following paragraphs:

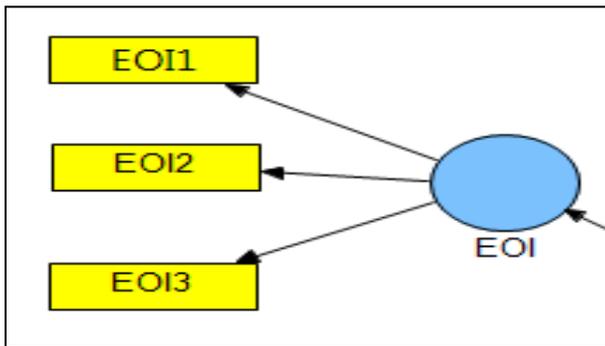


Figure 5.2  
*First Order Measurement Model of EO-Innovativeness (EOI)*

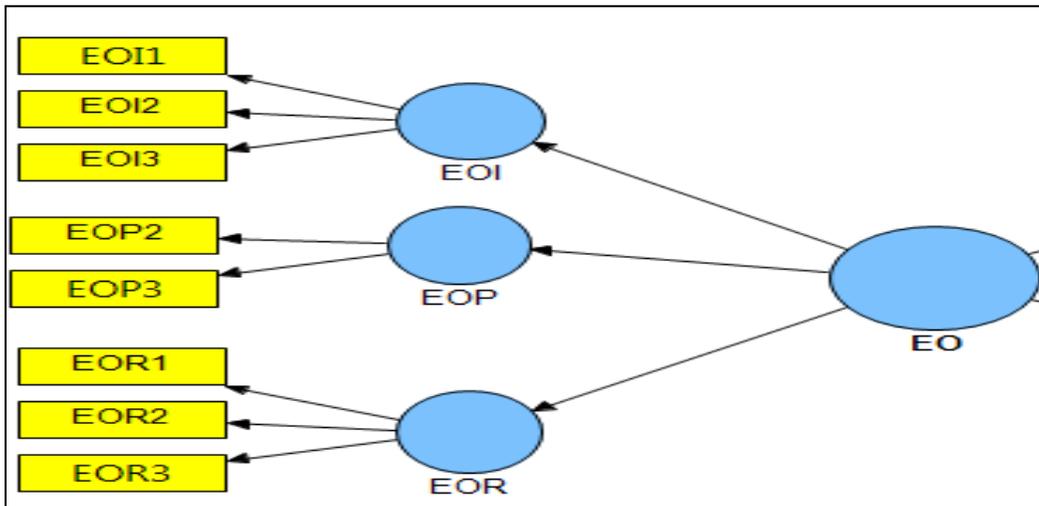


Figure 5.3  
*Second Order Measurement Model Of Entrepreneurial Orientation (EO)*

As illustrated in Figure 5.3, Entrepreneurial Orientation-Innovativeness (EOI) as a latent construct was measured by a set of measured variables namely EOI1 through EOI3. Similarly, as illustrated in Figure 5.4, Entrepreneurial Orientation (EO) construct was measured indirectly by nine items through other layer of latent constructs. Therefore, EO

is called a second-order measurement model. The second-order factor structure has two layers of latent variables. In this study as example, Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Excellence (OE), and Organizational Performance (OP) are called a second-order constructs as they caused multiple first order latent factors (Hair *et al.*, 2010). The following sub sections illustrate and justify more of using TQM, ERP, EO, OE, and OP as a second-order factor models.

#### **5.6.2.1 The Analysis of the Second Order Constructs**

In this study, we have five second-order latent constructs namely, Total Quality Management (TQM), Enterprise Resource Planning (ERP), Entrepreneurial Orientation (EO), Organizational Excellence (OE), and Organizational Performance (OP). Before testing the research model, the procedures were to examine of whether the first order construct were qualified to be conceptually explained by the respective second-order construct. Therefore, the first-order constructs should be explained well by the hypothesized second-order construct and they should be distinct (Byrne, 2010).

For Total Quality Management (TQM) construct, the seven first-order constructs namely Management Leadership (ML), Strategic Planning (SP), Human Resource Management (HRM), Service Design (SD), Information and Analysis (IA), Continuous Improvement (CI), and Benchmarking (B) are explained well by TQM construct since R square range from 0.579 to 0.880 as illustrated in Table 5.11. In addition to that, as illustrated in Table 5.8, these constructs were confirmed to be distinct using the Fornell and Larcker (1981)

criteria. Therefore, these constructs are conceptually explained by the second-order construct as named as Total Quality Management (TQM).

Table 5.11  
*The Establishment of Second-Order Constructs*

<b>Second Order Construct</b>	<b>First Order Construct</b>	<b>Loading</b>	<b>Standard Error</b>	<b>T Value</b>	<b>P Value</b>	<b>R Square</b>
Total Quality Management	<b>Benchmarking</b>	0.856	0.016	51.963	0.000	0.773
	<b>Continuous Improvement</b>	0.938	0.005	203.286	0.000	0.88
	<b>HRM</b>	0.880	0.017	52.788	0.000	0.775
	<b>Information and analysis</b>	0.923	0.009	97.182	0.000	0.852
	<b>Management Leadership</b>	0.761	0.027	28.453	0.000	0.579
	<b>Service Design</b>	0.900	0.010	92.995	0.000	0.81
	<b>Strategic Planning</b>	0.835	0.020	40.929	0.000	0.697
	<b>Business Process Skills</b>	0.896	0.012	77.567	0.000	0.802
	<b>Change Readiness</b>	0.847	0.015	55.215	0.000	0.717
Enterprise Resource Planning	<b>Executive Commitment</b>	0.818	0.020	40.488	0.000	0.669
	<b>IT Skills</b>	0.894	0.009	99.987	0.000	0.799
	<b>Learning</b>	0.871	0.013	68.499	0.000	0.759
	<b>Project Management</b>	0.795	0.022	35.991	0.000	0.633
	<b>Strategic IT Management</b>	0.775	0.021	37.460	0.000	0.601
	<b>Training</b>	0.841	0.016	51.679	0.000	0.707
Entrepreneurial Orientation	<b>Innovativeness</b>	0.773	0.026	29.696	0.000	0.597
	<b>Proactiveness</b>	0.787	0.035	22.231	0.000	0.62
	<b>Risk-taking</b>	0.840	0.021	39.426	0.000	0.705
Organizational Excellence	<b>Commitment</b>	0.911	0.011	80.816	0.000	0.83
	<b>Customer Focus</b>	0.886	0.015	57.439	0.000	0.784
	<b>Innovation</b>	0.917	0.011	82.691	0.000	0.84
Organizational Performance	<b>Customer</b>	0.839	0.019	44.550	0.000	0.704
	<b>Financial</b>	0.712	0.029	24.203	0.000	0.507
	<b>Internal Process</b>	0.809	0.028	29.367	0.000	0.654
	<b>Learning and Growth</b>	0.903	0.012	77.942	0.000	0.815

Similarly, Enterprise Resource Planning (ERP) construct was hypothesized to be measured through eight first-order constructs namely, Strategic IT Planning (ERPS), Executive Commitment (ERPE), Project Management (ERPP), IT Skills (ERPI), Business Process Skills (ERPB), Training (ERPT), Learning (ERPL), and Change Readiness (ERPC). These constructs were explained well by the Enterprise Resource Planning (ERP) construct as showed by the R square that ranged between 0.601 and 0.802. In addition, Table 5.10 pertaining to the results of discriminant analysis confirmed that these constructs are correlated. Therefore, Enterprise Resource Planning (ERP) as a second-order construct is explained by the eight hypothesized first-order.

In the same way, Entrepreneurial Orientation (EO) construct was hypothesized to be measured through the three first-order namely, Innovativeness (EOI), Proactiveness (EOP), and Risk-taking (EOR). These constructs were explained well by Entrepreneurial Orientation (EO) as showed by R square that were 0.597, 0.620, and 0.705 respectively. Table 5.10 of the discriminant analysis also confirmed that these constructs are correlated and thus EO as a second-order construct is explained by the three hypothesized first-order.

Furthermore, Organizational Excellence (OE) construct was also hypothesized to be measured through the three first-orders namely Customer Focus (EXC), Innovation (EXI), and Personnel Commitment (EXP). These constructs were illustrated well by the Organizational Excellence (OE) construct as showed by the R square that were 0.830, 0.784, and 0.840 respectively. Additionally, the correlation table of discriminant analysis

also confirmed the correlation between constructs of OE and concludes that OE as a second-order construct is explained by the three hypothesized first-order constructs.

Finally, for the Organizational Performance (OP) construct is hypothesized to be explained through Financial (OPF), Customer (OPC), Internal Process (OPI), and Learning and Growth (OPL). The R square in Table 5.11 was 0.704, 0.507, 0.654, and 0.815 respectively. Also the discriminant analysis for OP was confirmed the distinction of each one of these constructs, thus, the second-order nature of Organizational Performance was established.

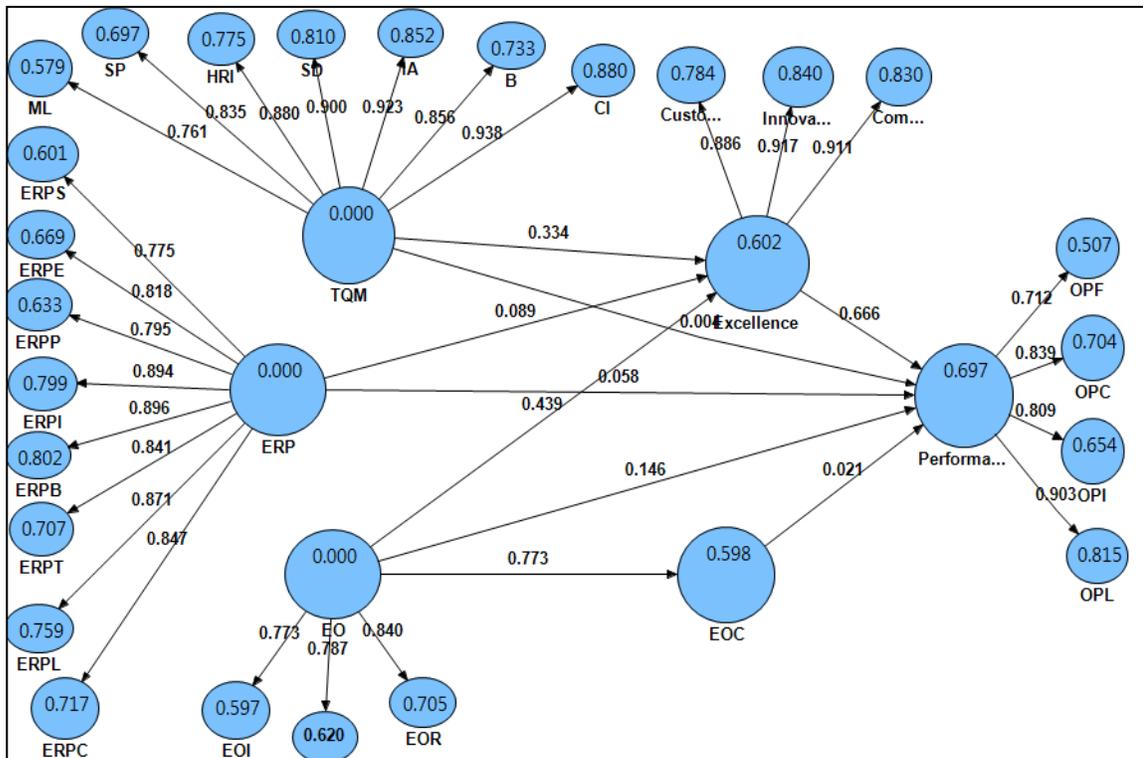


Figure 5.4  
Path Model Results

### 5.6.3 The Assessment of the Inner Model and Hypotheses Testing Procedures

Once the goodness of the outer model has been confirmed, the next stage was to test the hypothesized relationships among the variables. By running PLS Algorithm using SmartPLS, the hypothesized model was tested. Therefore, the path coefficients were generated as illustrated in the Figure 5.4 and Figure 5.5.

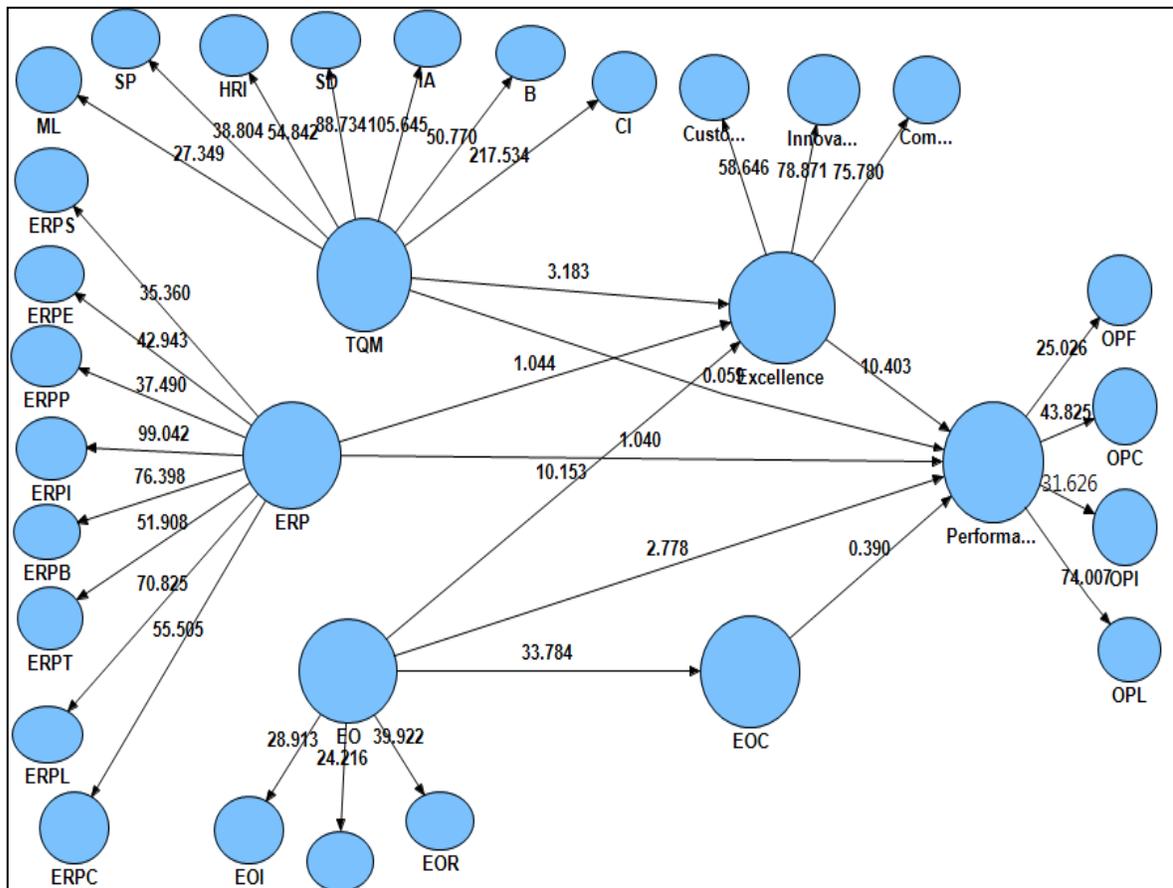


Figure 5.5  
Path Model Significance Results

Table 5.12  
*The Results of the Inner Structural Model*

Hypothesis	Hypothesis	Path Coefficient	Standard Error	T Value	P Value	Decision
H1	TQM -> Performance	0.220***	0.078	2.813	0.003	Supported
H1a	Management Leadership -> Performance	0.155***	0.062	2.493	0.006	Supported
H1b	Strategic Planning -> Performance	0.213***	0.055	3.839	0.000	Supported
H1c	Human Resource Management -> Performance	0.051	0.068	0.749	0.227	Not Supported
H1d	Service Design -> Performance	0.063	0.097	0.644	0.260	Not Supported
H1e	Information and Analysis -> Performance	0.158**	0.086	1.835	0.034	Supported
H1f	Continuous Improvement -> Performance	0.038	0.093	0.411	0.341	Not Supported
H1g	Benchmarking -> Performance	-0.271***	0.076	3.551	0.000	Not Supported
H2	ERP -> Performance	0.112***	0.054	2.077	0.019	Supported
H2a	Strategic IT Planning -> Performance	-0.391***	0.076	5.156	0.000	Not Supported
H2b	Executive Commitment -> Performance	0.198***	0.068	2.927	0.002	Supported
H2c	Project Management -> Performance	0.175***	0.059	2.986	0.001	Supported
H2d	IT Skills -> Performance	0.214***	0.084	2.537	0.006	Supported
H2e	Business Process Skills -> Performance	0.149**	0.079	1.881	0.030	Supported
H2f	Training -> Performance	0.063	0.063	1.009	0.157	Not Supported
H2g	Learning -> Performance	-0.095*	0.072	1.323	0.093	Not Supported
H2h	Change Readiness -> Performance	-0.237***	0.078	3.040	0.001	Not Supported
H3	EO -> Performance	0.480***	0.042	11.560	0.003	Supported
H3a	Innovativeness -> Performance	0.055	0.046	1.199	0.116	Not Supported
H3b	Proactiveness -> Performance	0.289***	0.048	6.066	0.000	Supported
H3c	Risk-taking -> Performance	0.126***	0.046	2.734	0.003	Supported
H4	TQM -> Excellence	0.334***	0.109	3.063	0.001	Supported
H5	ERP -> Excellence	0.089	0.088	1.019	0.154	Not Supported
H6	EO -> Excellence	0.439***	0.045	9.800	0.000	Supported
H7	Excellence -> Performance	0.666***	0.064	10.468	0.000	Supported
H8	EO -> EOC	0.773***	0.022	34.448	0.000	Supported
H9	EOC -> Performance	0.021	0.056	0.379	0.352	Not Supported

\*:p<0.1; \*\*:p<0.05; \*\*\*:p<0.01

For the purpose of concluding whether the path coefficients are statistically significant or not, bootstrapping techniques embedded in this study with SmartPLS 2.0. As reported in table 5.12, the T-Values with each path coefficient were generated using bootstrapping technique and P-Values subsequently were generated. The results showed that Total Quality Management (TQM) has significant effect on Organizational Performance ( $\beta=0.220$ ,  $t=2.813$ ,  $p<0.01$ ). Therefore, the hypothesis (H1) of the effect of TQM on Organizational Performance was supported. Similarly, the dimensions of TQM have mixed results. The Management Leadership (ML) ( $\beta=0.155$ ,  $t=2.493$ ,  $p<0.01$ ), Strategic Planning (SP) ( $\beta=0.213$ ,  $t=3.839$ ,  $p<0.01$ ), Information and Analysis (IA) ( $\beta=0.158$ ,  $t=1.835$ ,  $p<0.01$ ), have a positive significant effect on Organizational Performance and the hypotheses H1a, H1b, and H1e have been supported. In addition, Benchmarking has a negative significant effect on organizational performance ( $\beta=-0.271$ ,  $t=3.551$ ,  $p<0.01$ ) and the hypothesis H1g has been not supported. On the other hand, Human Resource Management ( $\beta=0.051$ ,  $t=0.749$ ,  $p>0.1$ ), Service Design ( $\beta=0.063$ ,  $t=0.644$ ,  $p>0.1$ ), and Continuous Improvement ( $\beta=0.038$ ,  $t=0.411$ ,  $p>0.1$ ) have no effect on Organizational Performance. Therefore, their results do not support the hypotheses of the study postulated in H1c, H1d, and H1f respectively.

On the other hand, the effect of Enterprise Resource Planning (ERP) on the Organizational Performance was examined as alone and through its dimensions. More specifically, ERP was found to have effect on Organizational Performance ( $\beta=0.112$ ,  $t=2.077$ ,  $p<0.1$ ). Therefore, the results support the hypothesis of the study as postulated in H2. The Dimension of ERP namely Strategic IT Planning ( $\beta=-0.391$ ,  $t=5.156$ ,  $p<0.01$ ) and Change Readiness ( $\beta=-0.237$ ,  $t=3.040$ ,  $p<0.01$ ) have negative significant effect and

therefore H2a and H2h are not supported. Executive Commitment ( $\beta= 0.198$ ,  $t=2.927$ ,  $p<0.01$ ), Project Management ( $\beta= 0.175$ ,  $t=2.986$ ,  $p<0.01$ ), IT Skills ( $\beta= 0.214$ ,  $t=2.537$ ,  $p<0.01$ ), and Business Process Skills ( $\beta= 0.149$ ,  $t=1.881$ ,  $p<0.01$ ) have positive and significant effect on Organizational Performance. Therefore, the results support the hypotheses of the study as postulated in H2a, H2b, H2c, H2d, h2e, and H2h. In addition, Training ( $\beta= 0.063$ ,  $t=1.009$ ,  $p>0.1$ ), and Learning ( $\beta= -0.095$ ,  $t=1.323$ ,  $p>0.1$ ) have no effect on Organizational Performance and, therefore, the results do not support the hypotheses as postulated in H2f and H2g.

The effect of Entrepreneurial Orientation (EO) and its dimensions have been examined. EO have a positive significant effect on Organizational Performance ( $\beta= 0.480$ ,  $t=11.650$ ,  $p<0.01$ ) and the hypothesis H3 has been supported. EO's dimensions namely, Proactiveness ( $\beta= 0.289$ ,  $t=6.066$ ,  $p<0.01$ ) and Risk-taking ( $\beta= 0.126$ ,  $t=2.734$ ,  $p<0.01$ ) have positive effect on Organizational Performance. Therefore, the hypotheses H3b and H3c have been supported. On the other hand, it has been found that Innovativeness ( $\beta= 0.055$ ,  $t=1.199$ ,  $p>0.1$ ) has no effect on Organizational Performance and therefore the hypothesis H3a not supported.

The effect of Total Quality (TQM) Management on Organizational Excellence has been found to be positively significant ( $\beta= 0.334$ ,  $t=3.063$ ,  $p<0.01$ ). Therefore, H4 has been supported as proposed. Additionally, Enterprise Resource Planning (ERP) has no effect on Organizational Excellence ( $\beta= 0.089$ ,  $t=1.019$ ,  $p>0.1$ ). The result does not support the hypothesis H5 of the study. Moreover, the examination effect of Entrepreneurial

Orientation (EO) on Organizational Excellence showed that has a positive significant ( $\beta=0.439$ ,  $t=9.800$ ,  $p<0.01$ ), and therefore the hypothesis H6 has been supported.

Furthermore, the relationship between Organizational Excellence and Organizational Performance has been examined. The result ( $\beta=0.666$ ,  $t=10.468$ ,  $p<0.01$ ) showed that Organizational Excellence has a positive significant effect on Organizational Performance. The result supports the postulated hypothesis H7. Additionally, Entrepreneurial Orientation (EO) was found to have a positive significant effect on Entrepreneurial Organizational Culture (EOC) ( $\beta=0.773$ ,  $t=34.448$ ,  $p<0.01$ ) and according to that the hypothesis H8 has been supported. However, on the other hand, the effect of EOC on Organizational Performance has been found to be not significant ( $\beta=0.021$ ,  $t=0.379$ ,  $p>0.1$ ), and therefore this result does not support the hypothesis of the study postulated in H9.

#### **5.6.4 Testing the Mediating Effect of Organizational Excellence**

Based on the theoretical framework of this study, the mediating effect of Organizational Excellence has been proposed between TQM, ERP, and EO from one hand and Organizational Performance on the other hand (Figures 5.6).

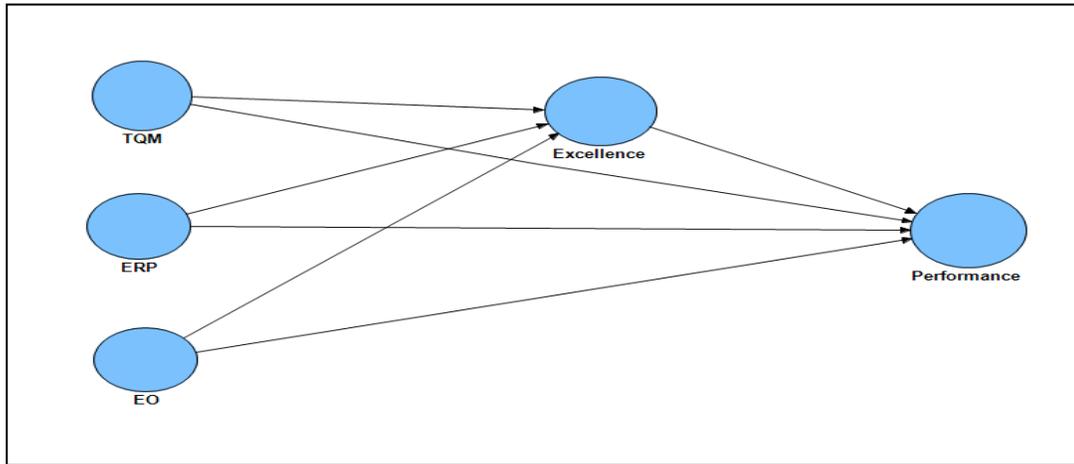


Figure 5.6  
*The Mediating Role of Organizational Excellence*

For testing the mediating effect of Organizational Excellence, SmartPLS 2.0 was used to examine the effect. As illustrated in Table 5.13, the results showed that there is a full mediation effect of Organizational Excellence in the relationship between Total Quality Management and Organizational Performance at the 0.01 level of significant ( $\beta=0.223$ ,  $t=3.597$ ,  $p<0.01$ ) according to the bootstrapping method. Therefore the result supports hypothesis of the study as postulated in H10. In addition, the mediating effect of Organizational Excellence in the relationship between Enterprise Resource Planning and Organizational Performance has been found to be not significant ( $\beta= 0.059$ ,  $t=0.949$ ,  $p>0.1$ ) and therefore, hypothesis H11 not supported in this study. Moreover, the mediating effect of Organizational Excellence between Entrepreneurial Orientation and Organizational Performance was examined. It was found that there is a partial mediation effect in this relationship ( $\beta= 0.293$ ,  $t=5.737$ ,  $p<0.01$ ). As a result, the hypothesis H12 has been supported.

Furthermore, the Variance Accounted For (VAF) has been examined to confirm the previous results. According to Hair *et al.*, (2014) the VAF is proposed as follow:  $VAF < 20\%$  = No Mediation;  $20\% < VAF < 80\%$  = Partial Mediation;  $VAF > 80\%$  = Full Mediation. The VAF for the H10 was 0.982 to be Full mediation, H11 was 0.505, and for the H12 was 0.667 to be Partial Mediation.

Table 5.13  
*Testing the Mediation Effect of Organizational Excellence and EOC*

Hyp. No	Hypothesis	A		B		a*b		C		c'		Variance Accounted For (VAF)	Bootstrapping Method	Baron & Kenny Method
		Path Coefficient	T.Value											
H10	Excellence as a mediator between TQM and Performamnce	0.334***	2.883	0.666***	9.785	0.223***	3.597	0.22***	2.754	0.004	0.056	0.982	Mediation Effect	Full Mediator
H11	Excellence as a mediator between ERP and Performance	0.089	0.977	0.666***	9.785	0.059	0.949	0.112**	1.998	0.058	0.941	0.505	No Mediation Effect	Not Mediator
H12	Excellence as a mediator between EO and Performance	0.439***	9.499	0.666***	9.785	0.293***	5.737	0.48***	11.408	0.146***	2.754	0.667	Mediation Effect	Partial Mediator
H13	EOC as a mediator between EO and Performance	0.773***	33.778	0.021	0.406	0.017	0.394	0.48***	11.408	0.146***	2.754	0.100	No Mediation Effect	Not Mediator

\*:p<0.1; \*\*:p<0.05; \*\*\*:p<0.01

### 5.6.5 Testing the Mediating Effect of Entrepreneurial Organizational Culture

Figure 6.8 shows the proposed relationship of the effect of Entrepreneurial Organizational Culture (EOC) as a mediator between Entrepreneurial Orientation (EO) and Organizational Performance (OP).

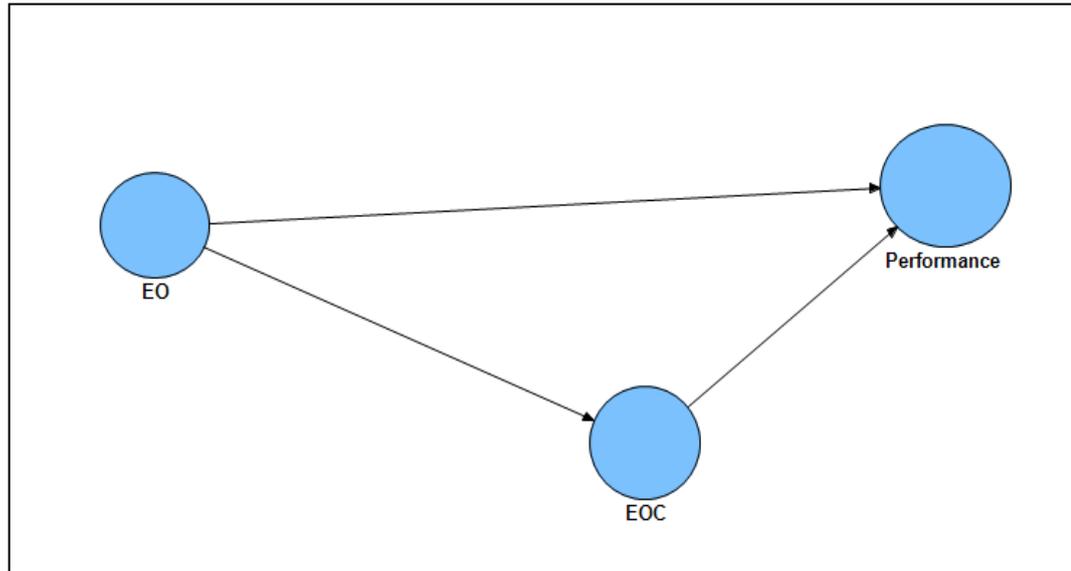


Figure 5.7  
*The Mediating Role of Entrepreneurial Organizational Culture*

For testing the mediating effect of Entrepreneurial Organizational Culture (EOC), SmartPLS 2.0 was used to examine the effect. As illustrated in Table 6.13, the results showed that there is no mediation effect of Entrepreneurial Organizational Culture in the relationship between Entrepreneurial Orientation and Organizational Performance at the 0.1 level of significant ( $\beta= 0.017$ ,  $t=0.394$ ,  $p>0.1$ ) according to the bootstrapping method. Therefore the result does not support the hypothesis of the study as postulated in H13.

### **5.6.6 The Predictive Relevance of the Model**

In the literature of multivariate data analysis, R square of the endogenous variable is explained by the predictor variables. Therefore, the R square's magnitude for the endogenous variables were regarded as an indicator of predictive power of the model. Moreover, the technique of reusing sample was applied as developed by Stone (1975) and Geisser (1975) to confirm the predictive validity of the model. For this purpose, as argued by Wold (1982), PLS is used as very well and fit software for the sample's reuse technique (Gotz, Liehr-Gobbers, & Krafft, 2011).

#### **5.6.6.1 Cross-Validated Redundancy**

The model predictive relevance can be examined by the Stone-Geisser non-parametric test (Chin, 1998; Fornell & Cha, 1994; Geisser, 1975; Stone, 1975). In Smart-PLS package, the blindfolding procedure can be performed to examine the predictive of the model. Blindfolding step is designed to remove some data while handle them as a missing values for parameters estimation. Then, the estimated parameters are used again to reconstruct the raw data that are supposed earlier to be missed. As a result of blindfolding process, a general cross-validating metrics  $Q^2$  produced.

Generally, there are several forms of  $Q^2$  that can be gained based on the form of the chosen prediction. A cross-validated communality is obtained when the points of the data are predicted employing the underlying latent variable scores. While, if the prediction of the data points is acquired by the LVs that predict the block in question, a cross-validated redundancy  $Q^2$  is the output.

It has been indicated by Fornell and Cha (1994) that the cross-validated redundancy measure can be considered as a reliable indicator of the model predictive relevance

under examination. According to Fornell and Cha (1994), the redundant communality was found to be larger than 0 for all endogenous variables, therefore, the model is considered to have predictive validity, but if not, the predictive relevance of the model cannot be concluded. As illustrated in Table 6.9, the cross-validated redundancy for Organizational Excellence (OE), Organizational Performance (OP), and Entrepreneurial Organizational Culture (EOC) were 0.377, 0.297, and 0.327 respectively. Thus, based on the criteria suggested by Fornell and Cha (1994), all values are more than zero which indicate an adequate predictive validity of the model.

Table 5.14  
*Predictive Quality Indicators of the Model*

Variable	Variable Type	R square	Cross-Validated Communality	Cross-Validated Redundancy
<b>Organizational Excellence (OE)</b>	Endogenous	0.602	0.643	0.377
<b>Organizational Performance (OP)</b>	Endogenous	0.697	0.430	0.297
<b>Entrepreneurial Organizational Culture (EOC)</b>	Endogenous	0.598	0.565	0.327

### 5.6.6.2 R-Square

As defined in the literature, R square is the indicator that shows the amount of variance explained in the endogenous variable by its exogenous variable. According to Hair *et al.* (2010), it reflects the quality of the variables included in the model. However, there are many criteria that can be used as guidelines in assessing the level of R square. For instance, Cohen (1988) criterion state that R square value equal 0.26 or more is considered substantial, 0.13 moderate, and 0.02 weak. Moreover, Chin

(1998) criterion state that R square value equal or more than 0.67 is substantial, 0.33 moderate, and 0.19 weak.

According to the aforementioned criteria, the R square of the endogenous variables namely organizational excellence, organizational performance, and entrepreneurial organizational culture are 0.602, 0.697, and 0.598 respectively as depicted in Table 6.9.

### 5.6.6.3 Effect Size

According to Cohen's (1988) criterion, the effect size is less than 0.02 are less (0.02=small, 0.15=medium, 0.35=high). In Table 5.15, the effective size of Organizational Performance, and the interaction terms for some interaction are more than 0.1, however some other are less and considered as small. In the other table 5.16, the interaction was large only with EO which considered as small.

$$Effect\ size(f) = \frac{R_{incl}^2 - R_{excl}^2}{1 - R_{incl}^2}$$

Table 5.15

*The Effect Size of The Organizational Performance, And The Interaction Term*

Construct	R2incl	R2excl	R2incl-R2excl	1-R2incl	Effect Size
TQM	0.697	0.697	0	0.303	0.0%
ERP	0.697	0.696	0.001	0.303	0.3%
EO	0.697	0.693	0.004	0.303	1.3%
Excellence	0.697	0.514	0.183	0.303	60.4%

Table 5.16

*The Effect Size Of The Organizational Excellence And The Interaction Term*

Construct	R2incl	R2excl	R2incl-R2excl	1-R2incl	Effect Size
TQM	0.602	0.569	0.033	0.398	8.3%
ERP	0.602	0.599	0.003	0.398	0.8%
EO	0.602	0.505	0.097	0.398	24.4%

### 5.6.7 The Goodness of Fit of the Whole Model

As an opposite of CBSEM approach, PLS Structural Equation Modeling has only one measure for goodness of fit. Tenenhaus *et al.* (2005) defined a global fit measure (GoF) for PLS is the geometric mean of the average communality and average R square for the endogenous constructs. For this purpose, GoF measure accounts for the variance extracted by both inner and outer model. According to the guidelines set up by Wetzels, Odekeren-Schroder, and Van Oppen (2009), the following formula is given:

$$Gof = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

In this study, the obtained GoF value was calculated by the formula.

$$Gof = \sqrt{(0.632 \times 0.737)} = 0.683$$

The comparison was made based on the baseline values of GoF by Wetzels *et al.* (2009) (small =0.1, medium =0.25, large =0.36). Therefore, the results showed that goodness of fit of the model is large indicating an adequate PLS model validity.

### 5.7 Summary of the Findings

This study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) as the technique of analysis. In this chapter, an elaborate treatment of the PLS-SEM mechanism analysis technique was given for the reason that PLS is a new analysis technique in construction.

Before testing the model of this research, rigorous steps were followed to establish the reliability and validity of the outer model as a standard reporting in SEM data analysis. After proving the validity and reliability of the measurement model, the hypothesized relationships were tested. After examining the hypothesized relationships between constructs, the predictive power of the model was examined and reported followed by testing the goodness of the overall model which was confirmed. The last procedure was examining the structural model and the results were reported in details. The below, Table 5.17, shows the results of the tested hypothesis.

Table 5.17  
*Summary of the Results*

<b>Hypothesis</b>	<b>Hypothesis Path</b>	<b>Decision</b>
H1	There is a positive significant relationship between TQM practices and Organizational performance.	Supported
H1a	There is a significant relationship between TQM-Management Leadership and Organizational Performance.	Supported
H1b	There is a significant relationship between TQM-Strategic Planning and Organizational Performance.	Supported
H1c	There is a significant relationship between TQM-HRM and Organizational Performance.	Not Supported
H1d	There is a significant relationship between TQM-Service Design and Organizational Performance.	Not Supported
H1e	There is a significant relationship between TQM-Information and Analysis and Organizational Performance.	Supported
H1f	There is a significant relationship between TQM-Continuous Improvement and Organizational Performance.	Not Supported
H1g	There is a significant relationship between TQM-Benchmarking and Organizational Performance.	Not Supported
H2	There is a significant relationship between ERP and Organizational performance.	Supported

Table 5.17 (Continued)

<b>Hypothesis</b>	<b>Hypothesis Path</b>	<b>Decision</b>
H2a	There is a significant relationship between ERP-Strategic IT Planning and Organizational Performance.	Not Supported
H2b	There is a significant relationship between ERP-Executive Commitment and Organizational Performance.	Supported
H2c	There is a significant relationship between ERP-Project Management and Organizational Performance.	Supported
H2d	There is a significant relationship between ERP-IT Skills and Organizational Performance.	Supported
H2e	There is a significant relationship between ERP-Business Process Skills and Organizational Performance.	Supported
H2f	There is a significant relationship between ERP-Training and Organizational Performance.	Not Supported
H2g	There is a significant relationship between ERP-Learning and Organizational Performance.	Not Supported
H2h	There is a significant relationship between ERP-Change Readiness and Organizational Performance.	Not Supported
H3	There is a significant relationship between EO and Organizational performance	Supported
H3a	There is a significant relationship between EO-Innovativeness and Organizational Performance.	Not Supported
H3b	There is a significant relationship between EO-Proactiveness and Organizational Performance.	Supported
H3c	There is a significant relationship between EO-Risk-taking and Organizational Performance.	Supported
H4	There is a significant relationship between TQM and Organizational Excellence.	Supported
H5	There is a significant relationship between ERP and Organizational Excellence.	Not Supported
H6	There is a significant relationship between EO and Organizational Excellence.	Supported
H7	There is a significant relationship between Organizational Excellence and Organizational performance.	Supported
H8	There is a significant relationship between EO and EOC	Supported
H9	There is a significant relationship between EOC and Organizational Performance.	Not Supported

Table 5.17 (Continued)

Hypothesis	Hypothesis Path	Decision
H10	The organizational Excellence mediates the relationship between TQM and Organizational Performance.	*Supported
H11	The organizational Excellence mediates the relationship between ERP and Organizational Performance.	** Not Supported
H12	The organizational Excellence mediates the relationship between EO and Organizational Performance.	***Supported
H13	The Entrepreneurial organizational Culture mediates the relationship between EO and Organizational Performance.	****Not Supported

\*Organizational Excellence as a mediator between the relationship between TQM and organization performance was found a full mediator according to Baron and Kenny (1986), bootstrapping, and VAF methods.

\*\* The mediation effect of organizational Excellence on the relationship between ERP and organization performance was found no mediation effect according to Baron and Kenny (1986) and bootstrapping methods, however, the method of VAF suggested by Hair *et al.* (2014) was found that there is a partial mediation.

\*\*\* Organizational Excellence as a mediator between the relationship between EO and organization performance was found a partial mediator according to Baron and Kenny (1986), bootstrapping, and VAF methods.

\*\*\*\* The mediation effect of entrepreneurial organizational culture on the relationship between EO and organization performance was found no mediation effect according to Baron and Kenny (1986), bootstrapping, and VAF methods.

Further discussion and explanations of these findings were provided in the next chapter in light of previous literature review, context of the study, and underpinning theories.

## CHAPTER SIX

### CONCLUSION, DISCUSSION AND RECOMMENDATIONS

#### 6.1 Introduction

This chapter provides a summary for the study. The first part of this chapter summarizes the study beginning with the issues and the motivations behind the research, then followed by the research design, and ends with the statistical analysis procedures used. It also discusses the results of statistical tests in the previous chapter, and highlights the contribution of the study and explains the results' potential implications. The last parts report the limitations of this study and highlight the possible directions for future research.

#### 6.2 Summary of the Study

In the last few decades, TQM has been considered as one of the important management instrument and a management philosophy that leads to the organization's continuous improvement and increase customers' satisfaction and ultimately achieve competitive advantages (Dean & Bowen, 1994; Ehigie & McAndrew, 2005; Flynn, Schroeder, & Sakakibara, 1994; Gao, 1991; Grant, Shani, & Krishnan, 1994; Konecny & Thun, 2011; Shiba, Graham, & Walden, 1993). In the literature, there are a bulk of searches examining the effect of TQM in several context and types such as service, manufacturing, public sector, SMEs, and higher educational institutions (Arawati, 2005; Al-Swidi & Mahmood, 2011; Das, Paul, & Swierczek, 2008; Douglas & Judge, 2001; Sohal & Terziovski, 2000; Saravanan & Rao, 2006; *et al.*, 2004; Demirbag *et al.*, 2006; Mohd Nizam & Tannock, 2005; Sohail & Hoong, 2003; Cruickshank, 2003; Dahar, Faize, & Niwaz, 2010; Nor Hazilah, 2004).

The current literature of quality management showed that the findings regarding the relationship between TQM practices and organizational performance are inconsistent (Kaynak, 2003). The majority of the researches that have been conducted reported positive results (Arawati, 2005; Flynn *et al.*, 1995; Douglas & Judge, 2001; Kaynak, 2003; Molina-Azorin *et al.*, 2009; Sila & Ebrahimpour, 2005; Yasin *et al.*, 2004), however on the other hand some other studies reported adverse results (Dooyoung, Kalinowski, & El-Enein, 1998; Sanchez-Rodriguez & Martinez-Lorente, 2004; Sila & Ebrahimpour, 2002). Due to the inconclusive results, some researchers such as Ehigie and McAndrew (2005) suggested more investigation about the relationship in the light of some other potential influencing variables.

Similar to findings and arguments of TQM, the previous literature has conflict results about the role of ERP in organizations. A relevant ERP literature shows that there are many studies conducted to examine the relationship between ERP and organizational performance. Despite of this extensive research work, many empirical studies reported inconclusive results (Kang *et al.*, 2008). Some of these studies argued that ERP systems can increase organizational performance whether financial or non-financial, provide many benefits, enhancing customer services, reducing inventory, improving communications, and help organizations to gain competitive advantages over competitors (Bendoly & Kaefer, 2004; Chung *et al.*, 2007; Florescu *et al.*, 2010; HassabElnaby *et al.*, 2012; Hunton *et al.*, 2003; Kale *et al.*, 2010; Nicolaou & Bhattacharya, 2006; Palaniswamy & Frank, 2002; Park *et al.*, 2007; Poston & Grabski, 2001; Shatat & Udin, 2012; Velcu, 2007; Wang *et al.*, 2005; Wier *et al.*, 2007). On the other hand, other researchers found adverse results that ERP may affect the organizational performance negatively (Hitt & Brynjolfsson, 1996; Mohmood & Mann, 1993; Weill, 1992; Wieder *et al.*, 2006).

In line with that, although the extensive researches conducted in literature of entrepreneurship, several studies pointed out that the relationship between EO and organizational performance is still inconclusive. Many writers found that the three dimensions of EO namely, innovativeness, practiveness, and risk-taking are positively related to organization performance (Brown et al., 2001; Covin & Slevin, 1989; Drucker, 1985; Knight, 1997; Lumpkin & Dess, 1996; Miller, 1983; Naman & Slevin, 1993; Wiklund, 1999; Zahra & Covin, 1995; Zahra, 1993a). However, others reported opposite results (Li *et al.*, 2009; Wiklund & Shepherd, 2005). However, the effect of EO on the performance of public organizations was not extensively investigated in the literature. In order to solve this inconsistency, other factors should be considered on this relationship for further investigation (Wiklund & Shepherd, 2005). In other words, in the current era of fast-paced technological advancement and globalization, organizations should be entrepreneurial for more, development, growing, and surviving (Dess, Lumpkin, & McGee, 1999).

Organizational Excellence has been considered as a holistic approach that improves the performance of the organization (Harrington, 2005), and has significant impact on business performance (Ooncharoen & Ussahawanitchakit, 2008). Innovation is the main driver of excellence that can enhance and drive the organizations from TQM to business excellence level (Mele & Colurcio, 2006). In this study, because of the inconclusive results of TQM, ERP, and EO and their relationships with organizational performance, organizational excellence was proposed to be the mechanism that can explain those relationships in better way. In other words, organizational excellence as an outstanding practice may help organizations to achieve the best results in organizational performance through implementing rare practices such as TQM, ERP, and EO.

Furthermore, Entrepreneurial Organizational Culture (EOC) is the joining of organizational culture and entrepreneurial organization in which innovation and other lineaments of entrepreneurship are combined to achieve the most desired performance (Duobiene & Pundziene, 2007). Previous researches suggested the importance link between culture and entrepreneurial activities (Kreiser *et al.*, 2010), which is considered as a motivator for strong entrepreneurial orientation (Lee *et al.*, 2011). Additionally, organizational culture can be regarded as one of the most players in initiating the fit between strategy adoption such as TQM and EO and the organizational internal environment (Kanji & Wallace, 2000; Llorens Motes & Verdu Jover, 2004; Yasin *et al.*, 2004).

The motivation behind this study is the inconclusive findings in the recent related literature concerning the relationship between TQM, ERP, EO, Organizational Excellence, EOC, and Organizational Performance. However, the inconsistent findings of these relationships need more future examination to solve the issues behind that (Al-Swidi & Mahmood, 2011c).

Furthermore, this study was motivated by the fact that TQM, ERP, and EO have similar objectives in enhancing organizational performance and sharing similar critical success factors. Therefore, although a comprehensive review of literature revealed that there has been an extensive research work regarding the separate effect of TQM, ERP, EO, EOC, and Organizational Excellence on Organizational Performance, the collective integrative impact of all of them has been greatly neglected.

The main objective of this study was to investigate the mediating role of Organizational Excellence between Total Quality Management (TQM), Enterprise

Resource Planning (ERP), Entrepreneurial Orientation (EO), and Organizational Performance as reflected in a public organization namely, Dubai Police. In addition, this study examines the mediating role of Entrepreneurial Organizational Culture (EOC) on the EO and Organizational Performance Relationship. Moreover, this study investigates the collective joint effect of TQM, ERP, and EO on Organizational Excellence and Organizational Performance.

Thus, based on the problem of this study in Chapter 1 and the comprehensive review of the relevant literature in Chapter 2, this study aimed to achieve the following main objectives:

1. To examine the relationship between Total Quality Management and Organizational Performance.
2. To examine the relationship between Enterprise Resource Planning and Organizational Performance.
3. To examine the relationship between Entrepreneurial orientation and organizational Performance.
4. To examine the relationship between Organizational Excellence and Organizational Performance.
5. To examine the relationship between Total Quality Management and Organizational Excellence.
6. To examine the relationship between Enterprise Resouce Planning and Organizational Excellence.
7. To examine the relationship between Entrepreneurial Orientation and Organizational Excellence.

8. To examine the relationship between Entrepreneurial Orientation and Entrepreneurial Organizational Culture.
9. To examine the relationship between Entrepreneurial Organizational Culture and Organizational Performance.
10. To investigate the effect of Organizational Excellence on the relationship between Total Quality Management and Organizational Performance.
11. To investigate the effect of Organizational Excellence on the relationship between Enterprise Resource Planning and Organizational Performance.
12. To investigate the effect of Organizational Excellence on the relationship between Entrepreneurial Orientation and Organizational Performance.
13. To investigate the mediating effect of Entrepreneurial Organizational Culture on the relationship between Entrepreneurial Orientation and Organizational Performance.

For the purpose of achieving the aforementioned objectives of this study, a comprehensive literature review was conducted in Chapter 2. The previous literature, related to entrepreneurship, quality management, and information systems, revealed that Total Quality Management (TQM), Enterprise Resource Planning (ERP), and Entrepreneurial Orientation (EO) despite their wide use and practice in SMEs, manufacturing, and service organizations, there are minimal researches attention in the public organizations, specifically in Police organizations. As has been stated earlier, the majority of the previous researches related to TQM, ERP, and EO reported positive effect on organizational performance. On the other hand, TQM, ERP, and EO implementation and practices were not all the cases successful. Therefore, some authors paid a considerable attention to investigate the reasons behind failure of these

practices. However, other researchers suggested some other influential variables in the relationships of these variables for better explanation and for better findings.

According to the literature review that conducted and reported in Chapter 1 and Chapter 2, seven critical factors of TQM, eight dimensions of ERP, three of EO, and three of Organizational Excellence have been identified. For TQM, the seven factors that have been selected are the most widely studied in quality management research conducted in service and public sector. These factors namely, management leadership (ML), strategic planning (SP), human resource management (HRM), service design (SD), information and analysis system (IA), continuous improvement (CI), and benchmarking (B). Similarly, the dimensions for ERP include strategic IT planning, executive commitment, project management, IT skills, business process skills, training, learning, and change readiness. Additionally, the dimensions for EO are: innovativeness, proactiveness, and risk-taking. Moreover, Organizational Excellence has three dimensions namely, customer focus, innovation, and personnel commitment.

As discussed in Chapter 2, this theoretical framework of this study could be grounded and underpinned by many theories such as Resource-Based View of the firm (RBV), Knowledge-Based View of the firm (KBV), and Innovation Theory. However, RBV is the main theory in this study and the other two theories are employed to complement it. RBV underlies on the match between available opportunities and organizational capabilities which will lead to achieve competitive advantages and increase organizational performance. TQM, ERP, and EO are considered by many researchers as the main resource for competitive advantages.

In the light of the objectives of this study, in Chapter 1 and Chapter 2 variables are extracted to be used and formulate the framework of this study. Therefore, to test the

developed theoretical framework, a quantitative methodology approach has been applied which introduced in Chapter 3 and Chapter 4. According to the problem statement, research questions, research objectives, and literature review, hypotheses of this study have been developed to be empirically tested. Based on the research methodology and the research design, a survey questionnaire was used to collect the data that reflect the constructs of the study. All the questions used in the questionnaire were adopted and adapted from previous different resources to support the face and the content validity. In addition, a Likert scale was used to measure all the items. To ensure the validity and reliability of the instruments used, a pilot study was conducted involving 111 respondents. The results indicated a satisfactory level of goodness of the measure and therefore the questionnaire was used to collect the data of the study.

In collecting the data of the study, a self-administrated mechanism was employed to collect the Arabic translated questionnaire through head sections officers in Dubai Police either in departments or police stations. A number of 565 questionnaires have been distributed and 355 have been returned representing 63% as a response rate. For the purpose of analyzing the collected data, Structural Equation Modeling Partial Least Squares (PLS-SEM) has been employed through SmartPLS software; however, SPSS has been used to obtain the descriptive data, non-response bias, and normality testing. The findings of the analyzed data were reported in Chapter 5 to be further discussed in this chapter. In addition to discussing the results of the analyzed data in this chapter, recommendation, contribution of this study, limitation, direction of future research, and conclusion have been concluded.

## 6.3 Discussion

### 6.3.1 Total Quality Management (TQM) and Organizational Performance

In order to achieve the first objective of this study regarding the effect of TQM on organizational performance, the regression paths between TQM and organizational performance were examined. As illustrated in Table 5.12 in Chapter 5, the relationship between TQM, as a composite construct, and the organizational performance was found to be positive and significant at the level of 0.01 of significant, therefore, supporting the hypothesis H1 ( $\beta = 0.220$ ,  $t = 2.813$ ,  $p < 0.01$ ). This result is consistent with the finding of the existing studies (Anderson *et al.*, 1995; Arumugam, Ooi, & Fong, 2008; Demirbag *et al.*, 2006; Dooyoung *et al.*, 1998; Escrig-Tena, 2004; Flynn *et al.*, 1995; Douglas & Judge, 2001; Irfan, Ijaz, Kee, & Awan, 2012; Kaynak, 2003; Kumar *et al.*, 2009; Llorens Montes & Verdu Jover, 2004; Molina-Azorin *et al.*, 2009; Munizu, 2013; Pinho, 2007; Prajogo & Sohal, 2003; Salajegheh & Pourrashidi, 2013; Shenaway *et al.*, 2007; Sila & Ebrahimpour, 2005; Tabe, Rezaeekelidbari, & Chegini, 2013; Talib *et al.*, 2013; Terziovski & Samson, 1999; Wang *et al.*, 2012; Zehir *et al.*, 2012; Zhang, 2000). The result suggested that TQM practice is critical for Dubai Police (DP) to attain its objectives and achieve the intended performance. Without doubt, DP with an effective and efficient TQM implementation would be able to reduce customers' and society complains, increase their satisfaction, produce good delivery system, and increase performance.

The result supported the positive and significant impact of TQM on organizational performance which is widely reported in the literature of quality management. The importance of TQM as a management philosophy and a pre-requisite for any

organization to survive, develops, and delights its customers (Khamalah & Lingaraj, 2007; Kumar *et al.*, 2009).

Furthermore, successful implementation of TQM can help DP to improve the services and avoid many defects in their daily work. For example, by successful TQM initiatives lead to reduce repetitive work, improve offered services, increase employees and cutomters' satisfifaction, design planned objectives, and enhance the entire organizational performance. Therefore, TQM successful initiatives can maintain and minimize the rate of errors (Al-Mansour, 2007).

Since the contribution degree of each TQM critical factor varies (Llorens Montes & Verdu Jover, 2004), this study conducted further examination of the importance of each TQM factor. The comprehensive understanding of each factor of TQM can help Dubai Police for a better utilization of the available resources. Therefore, towards a successful implementation of TQM, more attention should be paid and more investment should be allocated for highly contributing TQM factors when compared with less contributing factors. Previous studies reported mixed results regarding the the relationships between TQM dimensions and organizational performance (Rahman & Bullock, 2005). Table 5.12 in Chapter 5 revealed that three out of seven TQM critical factors were found to be positive and significant predictors of the organizational performance which will be discussed in the following sub-sections.

#### **6.3.1.1 Management Leadership (ML) and Organizational Performance**

Management leadership was found positive and significant determinant of organizational Performance as illustrated in Table 5.12 ( $\beta= 0.155$ ,  $t=2.493$ ,  $p<0.01$ ) and thus the hypothesis H1a is supported. This result is consistent with some other

previous studies (Abusa & Gibson, 2013; Arawati, 2005; Flynn *et al.*, 1995; Hendricks & Singhal, 2001; Irefin, Abdul-Azeez, & Hammed, 2011; Llorens Montes & Verdu Jover, 2004; Powell, 1995; Talib *et al.*, 2013; Yasin *et al.*, 2004). These studies emphasized on the importance of leadership system designed on vision and clear quality values to stimulate the whole organization to contribute to the successfulness of TQM implementation programs (Gupta *at el.*, 2005). It is the responsibility of the leadership to communicate the quality policy and vision, to deploy and develop the goals of quality and continuously improve initiatives (Rashid & Aslam, 2012). In addition to that, leaderships are responsible to shape the relationships between all players among departments to achieve the goals of TQM. Therefore, the management leadership system should be based on the capabilities of all employees to achieve the stakeholders' needs and increase customers' satisfaction through processes of continuous improvement.

It has been argued that the organizational performance depends on the leadership style of the leaders and managers (Ireland & Hitt, 2005). Therefore, the strategy required by DP's leaders is to design the suitable training for managers and leaders to improve the leadership skills towards transformational leadership.

The result showed that there is awareness among Dubai Police's officers of the critical role of leadership in implementing and developing TQM practice to achieve the desired goal, i.e. enhancing organizational performance. In addition, results revealed that top management leaders have long-term quality plans and clear quality goals. Moreover, top management leaders emphasize on the important of offering high quality of service delivered to customers more than the cost of the service.

### 6.3.1.2 Strategic Planning (SP) and Organizational Performance

Strategic planning incorporates the deployment and the development of plans that can improve relationship with suppliers, business partners, customers, and attaining short and long term objectives (Teh, Yong, Arumugam, & Ooi, 2009). According to the results of the data analysis depicted in Table 5.12 in Chapter 5, Strategic Planning was found to have a positive and significant influence on organizational performance ( $\beta=0.213$ ,  $t=3.839$ ,  $p<0.01$ ) supporting the hypothesis H1b. This result is in line and consistent with other previous study (Li *et al.*, 2003; Sila & Ebrahimpour, 2005; Sila & Ebrahimpour, 2002; Talib *et al.*, 2013; Wu *et al.*, 1997). Specifically, Strategic Planning (SP) showed a significant power in explaining the variation in the organizational performance construct. This concludes that strategic planning factor is one of main determinant of a successful implementation of TQM. The positive results of strategic planning are aligned with the positive effect of leadership as a TQM practices. In other words, leadership of DP has initiated a vision and mission that already linked to long-term and short-term objectives.

In a police department, it has been widely emphasized that strategic planning is the most important factor to achieve the planned goals and objectives which are aligned with the strategic plan not only of Dubai Police but also strategic plan of the Dubai Government. In a police department, fighting crimes, control roads, and providing safety and security are the main objectives to be fulfilled. For this purpose, an advanced planning either short-term or long-term is required to design plans, methods, and techniques to accomplish the desired vision and mission. In other words, the strategic planning's role is to manage the available resources in organizations for achieving higher degrees of success, and to direct capabilities

towards gaining the planned objectives. The awareness of Dubai Police's officers of the importance of strategic planning leads to the conclusion that a proper planning leads to an enhanced organizational performance.

In summary, the results indicated an adequate mission statement that effectively communicates with all employees to gain their support. Additionally, DP has effective system to set and review periodically short-term, long-term objectives, and policies to align with the requirements and needs of customers.

### **6.3.1.3 Human Resource Management (HRM) and Organizational Performance**

The effect of Human Resource Management (HRM) on organizational performance was examined and reported in Table 5.12 in Chapter 5. This study revealed that HRM was insignificant determinant of organizational performance ( $\beta = 0.051$ ,  $t = 0.749$ ,  $p > 0.01$ ). Therefore, the result was not supportive to the proposed hypothesis H1c. In addition, this result was not in line with previous studies in the literature regarding the effect of HRM on organizational performance (Arawati, 2005; Flynn *et al.*, 1995; Powell, 1995; Talib *et al.*, 2013; Yasin *et al.*, 2004). The instrument used to measure HRM dimension was based on measurement used by Brah *et al.*, (2000) that consisted of employee empowerment, employee involvement, and employee training. Therefore, regardless of the previous wide agreement in the literature of the significant and positive effects of these practices on increasing organizational performance, this study found that HRM, which contains all these practices, has insignificant effect on organizational performance. This result revealed the gap between employees and other managerial practices. It means that Dubai Police's employees are not effectively involved in decision making process and receiving less empowerment, involvement, and training.

Due the bureaucratic management process in police departments which involves a very routine daily job and the nature of police management to have orders from top officers to be obeyed by employees, the choice and decision making from employees is not empowered by top management. In addition, the employees' needs in terms of involving, empowering, or training are not provided as a police management philosophy that focusing on field work more that management concerns. In other words, the environment in police department is sometimes tough which focusing on the organizational achievement and neglecting the employees' needs. The reason may be behind the less empowerment and enforcement officers in DP is due to the fear of leading to corruption and in turn jeopardize the entire performance (New Straits Times, 2004).

In the view of the Resource-Based view theory, HRM is considered as one of the most tangible resource and assets that can help organizations to achieve their goals and gain competitive advantages. Additionally, the contingency theory of the congruence model argued that HRM can only achieve the desired results only if there is a match between managers and their employees' capabilities and the empowerment and involvement practices. Therefore, if managers are not really qualified to drive the level of performance through their employees, the practices of HRM including training, involvement, and empowerment may not be the interest of the organization. Similarly, if the employees are not having the proper qualification to involve in the decision making process, they may drive the organization to the wrong direction. In other words, it is a match between the capabilities and qualification of both employees and managers that can lead to increase organizational performance.

In relation to training, it is considered the fundamental instrument for strengthen and implementing TQM practices. Therefore, employees can not be expected to involve in the quality development if they are not equipped with needed knowledge bases and skills (Chow & Lui, 2003). In other words, trained employees in DP are better to understand the necessary improvement needed and reponse and communicate with cutomer positively (Kaynak & Hartley, 2008). In brief, due to the essential role of employees, the issue of HRM should be reformed and evaluated in determining the TQM implementation success.

Thus, the results of this study regarding the HRM practices revealed that DP should focus more on how they can encourage their employees to achieve the quality performance in terms of evaluate employees' suggestions, team management, provide the proper training, and empower employees and involve them to take initiatives when solving the customers' complaints.

#### **6.3.1.4 Service Design (SD) and Organizational Performance**

The results of this study showed that service design has insignificant effect on organizational performance ( $\beta= 0.063$ ,  $t=0.644$ ,  $p>0.1$ ). These finding is inconsistent with other studies that found a strong relationship between service design and organizational performance (Anderson *et al.*, 1994; Flynn *et al.*, 1995; Lakhe & Mohanty, 1995; Llorens-Montes & Verdu-Jover, 2004; Talib *et al.*, 2013). Lakhe and Mohanty (1995) argued that good service design would improve the organizational performance.

The insignificant effect of service design on organizational performance in Dubai Police could be explained by the fact that customer's voice still absent. The impact of

customers on organizational service design is still not effective (AL-Zamany *et al.*, 2002). The new concept of the community police, however, used but still not practiced to serve customers in a better way. In other words, the traditional performance measures of police towards focusing on the customers' services requirements had become outdated and needs to be improved and changed (Langworthy, 1999). For the sake of improving the design of the service, DP should look again at their policies and reengineer them if needed, and in turn linked to capabilities of their employees to enhance the quality of their service.

Furthermore, the results showed the lack of reviewing the service design before introducing and marketing which reflects unsatisfied beneficiaries. Last but not least, the results also indicated the lack of participation when designing the new service from employees in different departments of DP.

#### **6.3.1.5 Information and Analysis (IA) and Organizational Performance**

Information and analysis of TQM is very important to enhance quality performance (Prajogo, 2005). In this study the effect of information and analysis on organizational performance was found to be positive and significant ( $\beta = 0.158$ ,  $t = 1.835$ ,  $p < 0.01$ ). Information system is one of the most important factors that help organizations to get the best out of TQM initiative to achieve its success and, in turn, leads to an increasing the organizational performance (Ahire *et al.*, 1996). In addition, the information and analysis is considered to be the main driver for effective performance (Saraph *et al.*, 1989). This result is consistent with other previous studies (Ahire *et al.*, 1996; Flynn *et al.*, 1995; Kartha, 2004; Ott & van Dijk, 2005; Powell, 1995; Saraph *et al.*, 1989; Sila and Ebrahimpour, 2005; Sit, Ooi, Lin, & Chong, 2009).

Organizations such as DP with better infrastructure of information systems would be able to control the quality information system that leads to better organizational performance. The positive and significant result reflects the awareness of DP of the significant of information and analysis. In DP, there are many systems such as ERP system that helps DP to store and analyze their gathered information from different systems. The wide used programs in DP were found based on the increasing awareness among DP's leaders to enhance their performance through advanced and efficient systems. Now, there is an orientation in Dubai Government to convert Dubai as a smart city. To achieve this purpose, Dubai Government enforces all public departments in Dubai to convert all electronic services to smart services through smart devices such as mobiles. In addition, the results reflect the existing of the advanced technology in DP which is widely used among departments and police stations.

In summary, the results regarding the information and analysis practice revealed that DP has advanced programs that can reduce the time of service. Additionally, the collected data are analyzed regularly. Moreover, the available information systems in DP are always improved and evaluated.

#### **6.3.1.6 Continuous Improvement (CI) and Organizational Performance**

Continuous improvement is considered one of the most important factors that search for never-ending improvement the output performance (Talib *et al.*, 2013). Based on the results illustrated in Table 5.12 in Chapter 5, Continuous Improvement was found to be insignificant with organizational performance ( $\beta= 0.038$ ,  $t=0.411$ ,  $p>0.1$ ). This result is in contrast to other previous study (Yusuf *et al.*, 2007; Benavent *et al.*, 2005; Christos *et al.*, 2010; Gatchalian, 1997; Lakshman, 2006; Powell, 1995; Talib *et al.*,

2013), however, in line with the study of Burli *et al.* (2012) that found continuous improvement are not significantly affecting organizational performance.

The result shows that the continuous improvement practices are not given attention and not implemented effectively in DP. DP as a police department focuses more on achieving the daily jobs that related to issues happened in the society. Therefore, they do not pay more attention on how they can improve such service through implementing the continuous improvement. The continuous improvement should not only concern on some practices but cover all management practices (Benavent *et al.*, 2005). In rapid urbanization needs, DP should be continuously sensitive to the constituents' needs for more successful implementation of TQM practices, managers and employees in DP should plan and implement a comprehensive continuous improvement programs that involve all members in the organizational. The TQM practice in DP should involve all the processes and functions integrated to meet customer needs and achieve the desired continuous improvement (Ganiyu, Uche, & Elizabeth, 2012). The lacking of training which was explained above also leads to reduce the speed of improvement. Therefore, training, involvement, and encouragement are the best practices to enhance the continuous improvement to cover all management practices (Benavent, Ros, & Moreno-Luzon, 2005).

Furthermore, the results indicated that activities and operations in DP are not given the proper improvement that can focus more on quality as a long-term goal rather than the short-run. Therefore, DP should increase the awareness among employees in departments and police stations to practice improvement as a strategy that can enable them to serve customers in a better way to fulfill the desired competitive advantages.

### 6.3.1.7 Benchmarking (B) and Organizational Performance

Benchmarking is among the important processes of comparing the performance of the organization either internally or outside the organization (Talib *et al.*, 2013). The findings of this study revealed that Benchmarking has a negative significant effect on organizational performance ( $\beta = -0.271$ ,  $t = 3.551$ ,  $p < 0.01$ ). This result is not consistent with other previous results that found a positive impact of benchmarking on organizational performance (Ahire *et al.*, 1996; Arawati, 2005; Christos *et al.*, 2010; Powell, 1995; Talib *et al.*, 2013; Terziovski & Samson, 1999). However, Dow *et al.* (1999) reported in their study that some factors of TQM like benchmarking does not contribute to quality outcomes. Regardless, the negative effect of benchmarking on organizational performance, the result provided a significant importance of the effect of benchmarking. It has been also argued by Samson and Terziovski (1999) that some soft TQM factors might be more important in improving and enhancing organizational performance than the hard TQM factors such as benchmarking. Moreover, Powell (1995) found in his study insignificant effect of benchmarking on performance and the success of TQM implementation do not rely on benchmarking.

The negative effect of benchmarking on organizational performance in DP could be explained from the fact of lacking benchmarking practices with other organizations. The culture and perception among managers in DP that they are better than other organizations by implementing modern strategies and practices, so they do not need to have more benchmarking with others. However, they have some benchmarking but the culture of its effect on increasing the organizational performance is not strong.

Furthermore, DP should consider benchmarking as the strategy to achieve the best competitive position. Additionally, DP should conduct researches to discover the best practices of international and local police departments.

### **6.3.2 Enterprise Resource Planning (ERP) and Organizational Performance**

In order to achieve the second objective of this study regarding the effect of ERP on organizational performance, the relationship between ERP and organizational performance were examined. As illustrated in Table 5.12 in Chapter 5, the relationship between ERP, as a composite construct, and the organizational performance was found to be positive and significant at the 0.01 level of significant, therefore, supporting the hypothesis H2 ( $\beta = 0.112$ ,  $t = 2.077$ ,  $p < 0.01$ ). The result is consistent with other previous studies that reported a significant effect of ERP on organizational performance (Bavarsad, Rahimi, Norozy, 2013; Biehl, 2005; Davenport & Brooks, 2004; Irani & Love, 2001; Kamhawi, 2008; Kale, Banwait & Laroia, 2010; Rao, 2000; Shang & Seddon, 2000). However, other studies found insignificant effect of ERP on organizational performance (Hunton, Lippincott, & Reck, 2003; Velcu, 2007; Wieder, Booth, Matolcsy, & Ossimitz, 2006).

These results reflect the awareness of the importance of technology to enhance organizational performance. In spite of the complexity of ERP system as reported by many researchers, users in DP appreciate the positive and significant impact of ERP on leading them to fulfill their work efficiently.

However, the significant effect of ERP in DP on organizational performance, the results of this study showed that there are some factors of ERP which found to be insignificant which will be explained in the next sections.

### **6.3.2.1 Strategic IT Planning and Organizational Performance**

With regard to the effect of Strategic IT planning on organizational performance, the results in Table 5.12 in chapter 5 showed that the effect was found to be negative but significant at the level 0.01 level of significance ( $\beta = -0.391$ ,  $t = 5.156$ ,  $p < 0.01$ ). The negative sign indicates that increased in strategic IT planning would lead to the less organizational performance due to the complicated planning of IT strategies. This result is consistent with the result of other previous studies that reported the importance of IT planning to align with the needs of the organizations and support the strategic goals (Bavarsad, *et al.*, 2013; Das, Zahra, & Warkentin, 1991; King & Teo, 1996; Miller & Cardinal, 1994; Sampler, 1998; Segars, Grover, & Teng, 1998). In addition, the failure of ERP projects as a result of not understanding the mission and objectives of using it (Bavarsad *et al.*, 2013).

Strategic IT planning is a matching between the organization's capabilities and the changing, requirements of cross-functional business of the organization. In the case of DP, the negative sign indicates the weak link between IT capabilities and strategic goal as a continuous process. From another angle, the results lead us to conclude the unavailability of guidelines that related to the structure strategic planning of IT in DP. Therefore, strategic IT planning should include inputs of all functional areas in DP.

### **6.3.2.2 Executive Commitment and Organizational Performance**

As reported in chapter 5, the effect of executive commitment was found to have positive and significant effect on organizational performance ( $\beta = 0.198$ ,  $t = 2.927$ ,  $p < 0.01$ ). This result is consistent with the findings of previous results (Ban-croft, Seip, & Sprengel, 1998; Bavarsad *et al.*, 2013; Duchessi *et al.*, 1988; Guha, Grover,

Kettinger, & Teng, 1997; Stratman & Roth, 2002). They revealed the important role of top management commitment is the main factor when implementing of a new process and information technology systems such as ERP (Bingi et al, 1999; Davenport, 2000; Somers & Nelson, 2004), and even after implementation stage (Ifinedo & Nahar, 2006).

In the stage of implementing and using new complicated information system such as ERP, leadership and the top management commitment are considered to be the most important factor for leading the organizations to achieve the desired goals and benefits and ultimately enhance the whole performance of the organization. DP officers realize the importance of their leadership's support to implement successfully any information system. The positive and significant results indicated the important role of commitment of executive to assign the required resources in ERP projects, and long-term support resources. In addition, the results also revealed the enthusiastic of executive management about the ERP's possibilities which reflects the awareness of top management of the importance of ERP system. Lastly, the results showed that executive management support the overall goals related to ERP system.

### **6.3.2.3 Project Management and Organizational Performance**

Project management was found to be a positive and significant determinant of the organizational performance as illustrated in Table 5.12 in Chapter 5 ( $\beta= 0.175$ ,  $t=2.986$ ,  $p<0.01$ ). Therefore, this result supports the hypothesis H2c. This result, also, is consistent with other previous studies that considered project management as a critical successful factor for most process change initiatives (Duchessi, Schaniger, Hobbs, & Pentak, 1988; Grover & Malhoua, 1997; Roth & Giffi, 1994; White, Anderson, Schroeder, & Tupy, 1982). Project management is a process that involves

the use of knowledge and skills to achieve the desired objectives when implementing new projects such as new IT systems. The awareness of the importance of project management process is clear among DP officers to implement successfully new initiative such as ERP system. As a huge and complicated system, ERP needs more management processes as a project to planned and designed carefully.

Most of DP officers have participated in some projects' implementation such as ERP and TQM. Therefore, they realize more than other employees the significance of project management either in implementation stage prior to the using process, or in the post-implementation stage to trace the effect of the implemented system and what development it needs to work more effectively. The positive and significant results can be read from different points. Firstly, ERP as a project to be implemented has clear tasks to be performed. Secondly, the responsibilities of the project team work have been distributed clearly. Thirdly, measurements and evaluations are effectively employed to determine the project tasks status. Last but not least, the results reflect the experiences of leaders in DP when implementing ERP projects.

#### **6.3.2.4 IT Skills and Organizational Performance**

The importance of the employees' IT skills when implementing any system has been realized by DP officers. IT Skills was found to have a positive and significant effect on organizational performance ( $\beta = 0.214$ ,  $t = 2.537$ ,  $p < 0.01$ ). This finding is consistent with other prior results of Stratman & Roth (2002) that confirm the effect of the skills in using information system to achieve the optimum results. The technical skills are required not only in the pre-installation stage but in the post-installation support stage (Davenport, 1998; Ettl, 1998).

IT skills competency refers to ability of the users to configure and use IS to support the business (Stratman & Roth, 2002). The technical IT skills are demanded beyond the pre-installation and post-installation stages to support and refine the skills of users. ERP system has three implementation stages, i.e. pre-implementation, implementation, and post-implementation stages. The IT skills of users are needed in all these three stages to achieve the planned objectives from implementing ERP and to enhance the organizational performance. The lack of in depth technical knowledge and understanding of the nature of the system from the information management, technicians, and analysts lead to inefficient and poor ERP implementation which in turn influences the users' daily activities.

In summary, the significant and positive results reflect the ability of internal staff (users and database administrators) in DP to conduct ERP maintenance, system upgrades, and formal validation of all changes. In addition, the IT staff showed that they aware of role of ERP system to achieve business goals.

#### **6.3.2.5 Business Process Skills and Organizational Performance**

The results indicated that there is a positive and significant effect of Business Process Skills (BPS) on organizational performance ( $\beta = 0.149$ ,  $t = 1.881$ ,  $p < 0.01$ ) at the 0.01 level of significance. The results were consistent with other previous studies that reported the importance of the workers' and users' capabilities of knowledge with deep process skills as a critical to the ERP success (Roth *et al.*, 1994; Stratman & Roth, 2001). Therefore, the users should use and understand all information provided by ERP system and have absorptive capacity (Cohen & Levinthal, 1990). The business process has been recognized by DP officers and the importance to have this skill also realized.

The positive sign from the results revealed the business process knowledge among users in DP. Additionally, there is an understanding among employees of the significant of their actions that can affect the operations and functions. Moreover, the results denote a documentation of cross-functional business process flows.

#### **6.3.2.6 ERP Training and Organizational Performance**

ERP Training was found to be a positive but insignificant determinant of organizational performance according to Table 5.12 in Chapter 5 ( $\beta= 0.063$ ,  $t=1.009$ ,  $p>0.1$ ). Thus the proposed hypothesis is not supported. This result is inconsistent with the past findings that found a positive and significant effect of training on organizational performance especially when implementing information systems (Kwasi, 2004; Stratman & Roth, 2002; Yang, Ting, & Wei, 2006). It has been found that the failure of ERP is happened due to the lack of sufficient and improper users' training (Al-Mashari *et al.*, 2003).

Training programs are more effective when they are closely tailored to the specific requirements from all users (Stratman & Rath, 2002). ERP as a complex system is not a one-time event program, but it needs continuous training courses and sessions to ensure that employees and managers are up-to-date with the process changes and ongoing systems (Ettlie, 1998). The existing idea is that training is enough in the pre-implementation and implementation stages. Therefore, the neglected the ongoing process of training to increase the effectiveness of using ERP system, and that is why users faced some difficulties in daily using system. The insignificant results showed that there is a lack of training program to meet the ERP users' requirements.

### **6.3.2.7 ERP Learning and Organizational Performance**

As an opposite to the above result of training, ERP-learning was found to have a negative and insignificant effect on organizational performance ( $\beta = -0.095$ ,  $t = 1.323$ ,  $p > 0.1$ ) at the 0.1 level of significance. The finding indicates that although there is a negative effect of learning on organizational performance, the effect was not significant. The learning process competency refers to the various activities that designed and indentified for techniques of cutting-edge ERP from both external and internal sources through using ERP system capabilities to deliver the value of business in day to day operations (Stratman & Rath, 2002). This result is inconsistent with other previous studies that found that internal system of human resources such as learning may contribute and sustain the organization's competitive advantage through developing the employees' competencies and the generation of organizational knowledge (Barney, 1986 & 1991; Lado, Boyd, & Wright, 1992; Lado & Wilson, 1994; Stratman & Rath, 2002).

Learning as a continuous process of up-to-date competency was not realized and supported by DP. The culture of knowledge diffusion among employees not only the pre-implementation and implementation stages but after implementation the ERP system, was considered by some management leaders as a process of wasting time that may lead to reduce the organizational performance.

To achieve the objective of successful of ERP system, DP should track the development of users related to police industry through cross-functional groups meeting for the sake of discussing the latest issues of ERP system. In addition, DP should take care of the employees suggestions about ERP system. Moreover, DP should invite external experts to suggest better methods of using ERP system.

### **6.3.2.7 Change Readiness and Organizational Performance**

The effect of change readiness was found to have a negative but significant effect on organizational performance ( $\beta = -0.237$ ,  $t = 3.040$ ,  $p < 0.01$ ) at the 0.01 level of significance. The result is inconsistent with other previous studies that found ERP acceptance help organizations to achieve business perspective (Bavarsad, *et al.*, 2013). Change readiness indicates that workforce is ready to adapt to the new changes as a result of implementation of ERP system (Stratman & Rath, 2002). When implementing any new system, it is very important to involve the employees into the new business changes in processes. This will help them to be involved in the new changes and avoid the employees' dissatisfaction or uncertainty. DP officers did not pay attention to the strategy of making employees ready for the post-implementation changes resulting from ERP system. This may result from the fact that DP as a military organization, its employees can follow the orders and change and adopt themselves in all circumstances. But this may not be the right decision because employees in any organization should have the readiness for any changes that are caused by implementing any new system.

As an important strategy, change readiness should be taken care of as the first prerequisite for the introduction of any new system. The change readiness level among employees that may impact ERP system should be regularly assessed.

### **6.3.3 Entrepreneurial Orientation (EO) and Organizational Performance**

The findings of this study regarding the effect of EO on organizational performance were illustrated in Table 5.12 in Chapter 5. The result showed that EO has a positive and significant effect ( $\beta = 0.480$ ,  $t = 11.650$ ,  $p < 0.01$ ) on organizational performance at

the 0.01 level of significance and therefore supports the hypothesis H3. This result confirmed the EO's importance to organizational performance as reported in the previous literature (Abebe, 2014; Al-Swidi & Al-Hosam, 2012; Arief *et al.*, 2013; Campos & Valenzuela, 2013; Dada & Watson, 2013; Keh *et al.*, 2007; Li *et al.*, 2009; Liu & Liu, 2011; Mahmood & Hanafi, 2013; Miller, 1983; Saeed *et al.*, 2014; Sciascia *et al.*, 2014; Tang & Tang, 2012; Wang & Yen, 2012; Wiklund & Shepherd, 2005; Wiklund, 1999; Zahra & Covin, 1995; Zahra & Gravis, 2000; Zhang & Zhang, 2012). This suggests that the organization and its leaders may benefit from initiating and implementing strategy to increase and enhance the organization's entrepreneurial orientation level to survive and develop in the current turbulent environment which is fast-faced, dynamic, and complex.

In addition, this result indicated the importance of EO in increasing and enhancing the overall organizational performance in police departments. Entrepreneurial traits and activities are important for organizations to survive and grow (Wiklund & Shepherd, 2003). However, there are some small studies (Dimitratos, Lioukas, & Carter, 2004; George, Wood, & Khan, 2001; Slater & Narver, 2000; Walter, Auer, & Ritter, 2006) not supporting the positive impact of EO on organizational performance, the majority of the existing studies supported the significant and positive effect of EO on organizational performance. These positive results concluded and confirmed that organizations with high entrepreneurial activities can have a better performance when compared with low entrepreneurial activity involvement ones. Additionally, the results showed that DP leaders are not only entrepreneurial, but also they have the behavior to recognize the oppurunities to achieve competitive advantages. Moreover, entrepreneurial orientation as a strategic practice is very important for the police departments to align with the current critical situation of fighting crimes and

providing safety and security. In other words, the police departments should be entrepreneurial in taking advanced steps for the sake of developing new systems and strategies to be more advanced than the criminals who are having the advanced methods and techniques.

### **6.3.3.1 EO-Innovativeness and Organizational Performance**

In spite of the positive and significant result of the composite entrepreneurial orientation (EO), its dimension namely, innovativeness was not. Table 5.12 showed that innovativeness has insignificant effect on organizational performance ( $\beta= 0.055$ ,  $t=1.199$ ,  $p>0.01$ ) and therefore, not supporting the proposed hypothesis H3a. This result is inconsistent with previous studies that argued innovativeness can increase profitability, generate exceptional economic performance, contribute to the growth and profitability of entrepreneurial organizations (Brown & Eisenhardt, 1998; Covin & Miles, 1999; Covin & Wales, 2010; Jalali, 2012; Schumpeter, 1934; ; Wang & Yen, 2012; Wiklund, 1999), however consistent with other study that did not find this significant effect (Kraus *et al.*, 2012).

However, managers have the power to take strategic decisions, but still the nature of DP as a police organization covers this power. In other words, not all directors of DP perceive the importance of innovation. Rather most of them just implement the instructions of their bosses. Innovation as a strategic innovative strategy should be perceived by all directors of DP for the sake of building innovative organization rather than only following instructions. In other words, the willingness among employees to innovate should be supported and enhanced by leaders. The findings are attributable due to the absence of the entrepreneurial culture which can create the desire of innovativeness.

In brief, the results of this study indicated that the culture among departments regarding innovation and development activities is weak which may lead to introduce low quality services. Therefore, DP should encourage and enhance the willing of innovativeness among employees to achieve the aimed entrepreneurial performance.

### **6.3.3.2 EO-Proactiveness and Organizational Performance**

The result of the effect of proactiveness on organizational performance showed a positive and significant relationship ( $\beta= 0.289$ ,  $t=6.066$ ,  $p<0.01$ ) at the 0.01 level of significance. This result supported the hypothesis H3b, and confirmed the importance of proactiveness to the organizational performance as acknowledged in the existing literature. This result is consistent with the prior studies that reported the positive and significant effect of proactiveness on organizational performance (Bhuiyan, Menguc, & Bell, 2005; Caruana *et al.*, 2002; Kraus *et al.*, 2012; Lumpkin & Dess, 2001; Wang & Yen, 2012). In addition, this result also referred the significance of proactiveness in enhancing the organizational of Dubai Police. Proactiveness is very important strategy in police organizations. Criminals nowadays are using very developed methods to do their crimes. Therefore, unless DP has the proactive ability to fight crimes before happening, their efforts will be a waste of resources. In other words, proactiveness can help officers of DP in doing their daily job in better way rather than only waiting to response.

The results reflect that departments encourage employees to take proactive moves. Additionally, DP as a proactive department was one of the few departments to introduce new technologies and services.

### **6.3.3.3 EO-Risk Taking and Organizational Performance**

Similar to the result of proactiveness, also risk-taking was found to have a significant and positive effect on organizational performance ( $\beta= 0.126$ ,  $t=2.734$ ,  $p<0.01$ ) at 0.01 level of significance according to Table 5.12 in Chapter 5. This result confirmed the proposed hypothesis H3c which has been proposed earlier. The effect of risk-taking on organizational performance is consistent with other existing previous studies (Hughes & Morgan, 2007; Kraus *et al.*, 2012; Miller and Friesen, 1982; Wang and Yen, 2012). Officers of DP realize the importance and advantages of taking some steps over rivals in spite of the expected high rate of failure and risk. This can be explained from the angle of having accumulated experiences through Dubai's leaders such as Sheikh Mohammed who has always the tendency to take actions in the unfamiliar projects and enhancements. In addition, officers of DP are empowered by top management to have decisions in uncertain environment and potential risks. As a police job, officers always face risks and uncertain situations, therefore, sometimes they need and enforce to take decision even though there are potential risks. In other words, the results showed that DP adopts an aggressive, bold posture when faced with risk.

### **6.3.4 Total Quality Management (TQM) and Organizational Excellence**

The historical development of Total Quality Management (TQM) showed us that there it has gone three different development (Inoica & Baleanu, 2010). The main principles for TQM as a business practice are to satisfy customers, enhance quality of output, increase productivity, and reduce costs. In other words, TQM assists organizations to achieve and enhance business excellence (Lee, 2002). However, most of quality practices are in the right direction, but there still a shortage of realization

the important role of employee in quality improvement process to achieve business excellence (Rashid & Aslam, 2012). In addition, TQM can provide an explanation and processes for spontaneous investigation for excellence and quality (Shukla, 2013). The results in this study confirmed the positive and significant effect of TQM on organizational excellence ( $\beta= 0.334$ ,  $t=3.063$ ,  $p<0.01$ ) at 0.01 level of significance according to Table 5.12 in Chapter 5. This result confirmed the proposed hypothesis H4 which has been proposed earlier.

The effect of TQM on organizational excellence is consistent with other existing previous studies (Lee, 2002; Sharma & Kodali, 2008). The impact of TQM in creating business excellence and competitive advantages leads ultimately to enhance productivity, customer satisfaction, product and service quality, and delivery (Hassan *et al.*, 2007). According to Lu *et al.* (2011) the debate still remains whether direction towards business excellence in practice and theory is originated from the continuous development of TQM or apart from it. DP officers' realize the important of TQM to achieve high performance through organizational excellence practices. To this end, organizational excellence represents the proposed goal of implementing TQM which lead the organizations to have superior performance.

The results reflect the importance of TQM practices to enhance innovation, customer focus, and personnel commitment among employees in DP.

### **6.3.5 Enterprise Resource Planning (ERP) and Organizational Excellence**

Enterprise Resource Planning (ERP) is defined as the enterprise application packages that integrated to support several business functions (Tarn *et al.*, 2002), an advanced technological solution system that integrate critical information within organization

(Davenport, 2002), and an information system that integrates all business (Scalle & Cotteleer, 1994). The results show that the effect of ERP on organizational excellence not significant ( $\beta= 0.089$ ,  $t=1.019$ ,  $p>0.1$ ). Therefore the results not support hypothesis H5 proposed in Chapter 4. This result reflects that there is a lack of awareness among officers on DP about the importance of ERP for creating excellence. This is due to the fact of lacking the main reasons behind implementation of ERP system. As users, they aim to achieve performance from ERP system to enhance the daily business functions, and ignore the importance of achieving the excellence practice before that. Here the culture plays an important role of increasing this awareness.

### **6.3.6 Entrepreneurial Orientation (EO) and Organizational Excellence**

According to Arunachalam *et al.* (2013), based on previous researches EO can affect innovation, which is the heart of organizational excellence, and in turn innovation impacts organizational performance, and no single study tested the indirect relationship through innovation. In addition, Knight (2000) reported that SMEs has effectively applied and used entrepreneurship and marketing strategies to develop business excellence and accomplish the best performance. The results of this study confirmed the positive and significant effect of EO on organizational excellence ( $\beta= 0.439$ ,  $t=9.800$ ,  $p<0.01$ ) at 0.01 level of significance, and therefore confirmed the proposed H6 hypothesis.

Chen *et al.* (2007) pointed out the EO's characteristics contribute to excellence performance. Additionally, Dahlgaard-Park and Dahlgaard (2010) argued that leaders of organizations should encourage employees' creativity, learning, and support the knowledge management to achieve the organizational sustainable innovation excellence. The entrepreneurial traits among DP police leaders lead them to be aware

of the importance of excellence based on practicing entrepreneurial elements such as innovativeness, practicality, and risk-taking. The entrepreneurial activities in organizations help to enhance the innovation which will satisfy the customers and all stakeholders and ultimately increase the entire organizational performance. The results reflect the importance of entrepreneurial activities to enhance innovation, customer focus, and personnel commitment among employees in DP.

### **6.3.7 Organizational Excellence and Organizational Performance**

Organization performance and organizational excellence are considered the most important goals that any organization wants to fulfill. The relationship between them is interrelated where one leads to the other. In this study, the relationship between organizational excellence and organizational performance was found to be positive and significant ( $\beta = 0.666$ ,  $t = 10.468$ ,  $p < 0.01$ ) at 0.01 level of significance, therefore support the proposed hypothesis H7. This result is consistent with other previous studies which confirmed the effect of organizational excellence on organization performance (Ooncharoen & Ussahawanitchakit, 2008; Pinar & Girard, 2008).

Organization excellence elements such as innovation, customer focus, and personnel commitment were realized by DP officers as the most important factors that lead to achieve high level of performance. The Excellence concept as a practice and strategy, not a final purpose, has the ability to create the organizational capabilities and resources to achieve the success. The previous research of the relationship between organizational excellence and organizational performance reported that excellence is precedence for any organization to achieve high performance, and organizational excellence models help organizations to enhance and improve their organizational performance. The positive and significant results also indicated the important of

focusing on customers, encourage innovation among employees, and enhance the personnel commitment can increase the organizational performance.

### **6.3.8 Entrepreneurial Orientation (EO) and Entrepreneurial Organizational Culture (EOC)**

Entrepreneurial organizational culture (EOC) is coming as a result of joining two important variables, organizational culture and entrepreneurial organization (Duobiene & Pundziene, 2007). In this study the results confirmed the positive and significant effect of entrepreneurial orientation on EOC ( $\beta= 0.773$ ,  $t=34.448$ ,  $p<0.01$ ) at 0.01 level of significant and therefore confirm the hypothesized hypothesis H8.

The significant relationship between entrepreneurial activity and and culture and their affect on entrepreneurial behavior has been suggested by previous research (Kreiser *et al.*, 2010; Zahra *et al.*, 1999). In addition, previous research described entrepreneurial organizational characteristics are more related to organizational culture research (Duobiene & Pundziene, 2007). Moreover, Beugelsdijk (2007) reported that EOC can lead to high entrepreneurship levels, and he found the EOC is positively and significantly associated with regional innovativeness. Enhancing entrepreneurial trait in DP such as innovativeness, practiveness, and risk-taking can lead them to enhance and create a culture among leaders and employees that has entrepreneurial dimension. In other words, as a desired to be in organizations, entrepreneurial organizational culture has the power and the ability to increase the entrepreneurial traits among employees which will be reflected positively in their performance especially in police departments where they have to have this entrepreneurial awareness to fight crimes and provide safety and security to the society.

### **6.3.9 Entrepreneurial Organizational Culture (EOC) and Organizational Performance**

The entrepreneurial characteristics of people are influenced by culture (Razavi, 2012). Many previous studies focus on culture and organizational culture as a significant component that related to organizational effectiveness (Paulin *et al.*, 1999). In this study the effect of EOC on organizational performance was found to be not significant ( $\beta= 0.021$ ,  $t=0.379$ ,  $p>0.1$ ), and therefore hypothesis H9 was not supported. The effect of culture on organizational performance has been tested in the previous literature (Kim *et al.*, 2004; Lee *et al.*, 2004; Ogbonna & Harris, 2000). This insignificant result can be seen from the angle that DP officers however they are aware of the importance of entrepreneurial activities but they are misunderstanding of the entrepreneurial culture on organizational performance. The role of culture plays an important role in their decision. In other words, officers of DP as others in police departments have the culture of doing daily works in their departments with concerning about the consequences that may lead to enhance the organizational performance or vice versa.

### **6.3.10 The Mediating role of Organizational Excellence between Total Quality Management (TQM) and Organizational Performance**

In order to answer the study's questions and meet the research objectives, the researcher examined the mediating effect of organizational excellence between Total Quality Management (TQM) and organizational performance. As can be seen in Table 5.13 in chapter 5, the mediating effect of organizational excellence between TQM and organizational performance was confirmed at the 0.01 level of significance ( $\beta= 0.223$ ,  $t=3.597$ ,  $p<0.01$ ) according to the bootstrapping method. This result supported the hypothesis H10 of the study. In addition, the result showed organizational excellence as a full mediator in this relationship according to the value of VAF (Hair *et al.*,

2014). Moreover, this finding confirmed the logical use of organizational excellence as a practice that can help organizations to enhance performance through TQM implementation (Kaur, Singh, & Ahuja, 2013). In other words, organizational excellence in this study plays the role as the mechanism that explains the effect of TQM on organizational performance.

Previously, some studies confirmed the positive relationship between TQM and organizational performance from one side, and organizational excellence and organizational performance from the other side. Therefore, the collective effect of these variables on organizational performance is logically proposed and confirmed in this study.

The results also reflect the importance of the excellence as a mechanism that can explain the effect of TQM practices to enhance organizational performance through innovation, customer focus, and personnel commitment. Additionally, the results reflect the awareness of DP in practicing excellence in their daily work.

#### **6.3.11 The Mediating role of Organizational Excellence in the relationship between Enterprise Resource Planning (ERP) and Organizational Performance**

The effect of organizational excellence as a mediator between ERP and organizational performance was examined in this study. In Table 5.13 in chapter 5, the results of the mediating effect of organizational excellence between ERP and organizational performance was not confirmed at the 0.1 level of significance ( $\beta = 0.059$ ,  $t = 0.949$ ,  $p > 0.1$ ).

In contrary to our expectations, the results of the study revealed the insignificant and no effect of the organizational excellence between ERP and organizational

performance. This result reflects the fact of absence of organizational excellence when dealing with systems such as ERP. In addition, it also reflects the opinion of DP's officers when dealing with systems. It seems that there is a lack of understanding and awareness among them of the importance of having and practicing excellence while implementing information systems. They look at the implementation process as a work that can be done by the supplier, technical employees, and users without need to focus on the other issues that may help to improve the implementation process and lead ultimately to achieve the desired objectives from the system.

Furthermore, DP should employed excellence practices when implementing ERP system to achieve the optimum organizational performance.

#### **6.3.12 The Mediating role of Organizational Excellence in the relationship between Entrepreneurial Orientation (EO) and Organizational Performance**

In Table 5.13 in chapter 5, the mediating effect of organizational excellence between EO and organizational performance was confirmed at the 0.01 level of significance ( $\beta = 0.293$ ,  $t = 5.737$ ,  $p < 0.01$ ) according to the bootstrapping method. The result supported the hypothesis H12 of the study. In addition, the result showed that organizational excellence is a partial mediator in this relationship according to the value of Variance Accounting For (VAF) (Hair *et al.*, 2014). The logical effect of organizational excellence as a mechanism that explain the relationship between EO and organizational was confirmed. In addition, the result of this study reported the direct positive and significant effect of EO on organizational performance. Accordingly, this positive effect and significance will also be increased if explained more by the practices of excellence such as innovation, customer focus and personnel commitment.

The mechanism of organizational excellence in explaining the effect of entrepreneurial activities that can lead to organizational performance has been positively evaluated and practiced in DP through focusing on customer, employees, and innovation.

The indirect effect through a mediating variable between EO and organizational performance has been suggested by many researchers (Harms, 2013; Lau & Zhang, 2006; Lumpkin & Dess, 1996; Vij & Bedi, 2012). Innovation as the heart of excellence can be affected by EO and in turn impact the organizational performance (Arunachalam *et al.*, 2013). EO's dimensions namely, innovativeness, proactiveness, and risk-taking can not be achieved unless there is an excellent practice such as innovation, customer focus, and personnel commitment. Innovativeness is the willingness among managers and employees to innovate, whereas innovation is the practice to implement the innovative ideas. Therefore, innovativeness can not be achieved only through implementing the innovative ideas to gain excellent results and subsequently lead to enhance the entire organizational performance.

### **6.3.13 The Mediating role of Entrepreneurial Organizational Culture (EOC) in the relationship between Entrepreneurial Orientation (EO) and Organizational Performance**

As can be seen in Table 5.13 in chapter 5, the mediating effect of Entrepreneurial Organizational Culture (EOC) between EO and organizational performance was not confirmed at the 0.1 level of significance ( $\beta = 0.017$ ,  $t = 0.394$ ,  $p > 0.1$ ) according to the bootstrapping method. Therefore, the proposed hypothesis H13 was not supported.

In contrary to our expectation, the findings of this study revealed the insignificant mediating effect of EOC in the relationship between EO and organizational Performance. This result is inconsistent with other previous studies that confirmed the

significant effect of organizational culture as a mediator and moderator on the relationship between EO and organizational performance (Beugelsdijk, 2007; Korry, 2013; Saeed, Yousafzai, & Engelen, 2014; Todorovic & Ma, 2008). The result revealed a mismatch between the entrepreneurial activities and the cultural practices that may generate the opposite results.

This result can be explained in the view of the organizational change theory. In DP, there is unclear vision that can direct employees towards achieving the desired objectives. The environmental culture, especially in police department, is different from other civilian organizations. Employees in police department are order-followers and less power to have their own decisions. Due to this reason, the development of innovative and tolerant working environment is fall behind. In other words, employees, regardless their position and responsibilities, are not empowered and delegated to take initiatives to improve the daily processes. Additionally, there are no incentive programs that encourage them to implement and take the advantages to improve the services. In DP, the current main objective is to be customer-focused by providing safety and security to the community members and to increase their satisfaction. Therefore, there should be a cultural change that can fit the desired strategies (Prajogo & Sohal, 2001). Furthermore, the entrepreneurial capabilities should be exploited and enhanced by increasing incentives through policies of human resource management.

As has been mentioned earlier, that this study had many contributions to both theory and practice; therefore, some significant contributions are briefly explained in the following sub-sections.

## **6.4 Contributions of the Study**

In this study, many insights concerning the issues related to the organizational performance of Dubai Police (DP) have been arisen. The present study, as to date, is one of very few studies conducted in the Arab world to examine the joint effect of TQM, ERP, and EO on organizational excellence and organizational performance under certain entrepreneurial organizational culture. In addition, this study is an attempt to expand the boundary of the current existing knowledge in the literature by examining the mediating effect of organizational excellence and entrepreneurial organizational culture on the organizational performance using PLS-SEM analysis. Therefore, by integrating the effect of TQM, ERP, EO, EOC, and organizational excellence, this study had many contributions in the literature and practice. In the next following sub-sections, some contributions were elaborated of this study.

### **6.4.1 Contributions to the Literature**

This study is conducted to increase the understanding of the relationship between TQM, ERP, EO, EOC, organizational excellence and organizational performance. According to the results of the previous studies, the study's framework was developed and used as an instrument to examine the hypothesized relationships. In Chapter 1, the significance of this study has been discussed. There are many contributions that are discussed as follows.

First, this study demonstrated the importance of TQM in public departments, particularly in police departments. In addition, it contributed theoretically to the TQM literature by reexamining the unresolved matter concerning the relationship between TQM and organizational performance. The inconsistency among researchers in the

literature regarding the impact of TQM on organizational performance called for further discussion and investigation. Moreover, this study contributed significantly to the literature by integrating the effective ERP and EO as the innovative strategies and practices to the theoretical model to better explain the variance in the construct of organizational performance.

Second, this study reported the significance of ERP for enhancing the overall organizational performance. However, the direct effect of ERP on organizational performance was not confirmed, some of the ERP's dimensions showed a positive and significant effect on organizational performance. The previous studies in the literature reported inconsistent results. Some of this results showed that ERP can enhance the performance positively, but other argued that ERP can affect the performance negatively and sometimes considered as the main reason for collapsing (Hunton *et al.*, 2003; Velcu, 2007; Wieder, Booth, Matolcsy, & Ossimitz, 2006). There are different reasons for the negative impact of ERP on the organizational performance such as lacking of strategic management practices, culture, and change resistance. Therefore, in this study ERP was examined with other strategies such as TQM, EO, and EOC.

Third, the current study showed the significance of EO for the organizational performance. Due to the inconsistent results about this relationship, this study contributed to the management literature by reexamining the effect of EO on organizational performance. However, there are bulk research works in the literature that tested the effect of EO on organizational performance; still there is no agreement among the researchers. As a result of the inconclusiveness in results, many practitioners and academics question of the suitability of EO strategy for

organizational performance (Wiklund & Shepherd, 2005). The findings of this study, however, confirmed the positive significant impact of EO on the organizational performance.

Fourth, the results of the current study revealed that the joint effect of TQM, ERP, and EO on the organizational performance was stronger than the separate effect of each of these strategies alone. In addition to that, this study suggested that TQM, ERP, and EO should be practiced and implemented as integrated strategies. This can be noticed from the inter-dependent exhibited among the dimensions of every construct. Moreover, when comparing the impact of TQM, ERP, and EO as composite variables with the impact of their dimensions on organizational performance, hardly recommended that these practices and strategies should be considered as bundles rather a grouping of strategies and practices.

Fifth, this study provided an important examination about the role played by organizational excellence in increasing the organizational performance. The mediating effect of organizational excellence as a mechanism that can explain the relationships more between TQM, ERP, EO, and organizational performance was examined. The results revealed that organizational excellence plays an important role in creating and enhancing organizational performance. In addition, the significance of organizational excellence contributes to the RBV theory by adding it as an important resource to achieve the organizational competitive advantages.

Sixth, the role of the EOC as an important factor was examined in this study. However, the result of the mediating role of EOC between EO and organizational performance was not confirmed due to some reasons, the EOC is still an important factor that can lead to successful implementation of different strategies and practices.

In other words, the lack of EOC or culture strategy may lead to waste the organizational capabilities and resources.

Seventh, the majority of previous studies concentrated on the manufacturing and services sectors. However, this study as a contrary to that extended the existing literature concerning TQM, ERP, EO, organizational excellence, and EOC in the public sector, taking the police departments in UAE as a case. Most of studies in public sector in general and police departments in particular were conceptual, observational, and descriptive in nature. Therefore, this study on the Dubai Police in UAE has been an attempt to add existing empirical existing literature.

Finally, in addition to the hypotheses testing and the model testing, this study conducted a rigorous analysis on the validation instrument. Majority of the previous studies depended on the traditional instrument validation such as factor analysis and Cronbach alpha coefficient. These kinds of instruments are not sufficient in the current complex needed analysis. More specifically, the present study used Partial Least Squares Structural Equation Modeling (PLS-SEM) approach to validate the measurement model and testing the hypothesized relationships. Thus, this study can be considered as one the very few thesis and studies that employed the approach of PLS-SEM to analyze the measurement model goodness of fit and testing the proposed hypotheses.

#### **6.4.2 Practical Contributions**

The present study's results have significant contributions and implications for managers, practitioners, and policy makers. There are many advantageous insights on

how TQM, ERP, EO, EOC, and organizational excellence can enhance the overall organizational performance. Some of these practical contributions are the following.

First, the results of this study can raise the awareness among decision makers and managers in Dubai Police on the significance of implementing TQM in their organizations. TQM as a management philosophy is considered as a prerequisite for any organization which want to achieve the competitive advantages and increase the organizational performance. In other words, if DP wants to implement any strategies or initiate new system, TQM is needed before that to the problems that can be come out later.

Second, ERP as an important integrated system, this study highlighted the importance of ERP for organizations to align with the competitive environment and achieve the advantages over competitors. Information technology has become essential for any organization that has a willing to be global. As reported in the last chapter, the integration between TQM and ERP can lead the organizations to achieve the desired objectives. The results of this study will help DP to have the advantages of implementing both TQM and ERP and to increase the awareness of employees about the importance of these two practices.

Third, the results also reported the entrepreneurial role inside the organization as one of the main important characteristics to survive and achieve a strategic position in the market. Therefore, the practical advantages from the study's results are that managers in DP should follow effective plans to enhance entrepreneurial culture and create entrepreneurial traits among its employees.

Fourth, the findings of this study suggested that TQM principles, ERP systems, and entrepreneurial culture should be effectively incorporated in DP. In addition, the DP policy-makers should pay an attention to restructure the strategies, practices, and policies to be aligned with the technological advancements and implementing entrepreneurial strategies. The integration of strategies such as TQM, ERP, and EO can help DP to increase its performance and achieve the optimum competitive advantages.

Fifth, due to the inconsistent in the previous study about the effect of TQM, ERP, and EO on organizational performance, organizational excellence intervened in this study to explain these practices in a better way. The results also show the important of organizational excellence as a practice to increase and enhance organizational performance. In addition, the results increase the awareness in DP to practice excellence which involves innovation and customer focus when implementing TQM, ERP, and EO. Excellence as a practice in DP can lead to higher performance, but also at the same time can be a desire and a result from practicing other initiatives. Moreover, DP should excel when dealing with other strategies and practices to have the successfulness and obtain the planned goals.

Sixth, although the results of the effect of EOC as a mediator between EO and organizational performance were insignificant, the important role of entrepreneurial culture still exists. This result confirmed the lack of awareness among DP officers of the importance of culture to enhance the entrepreneurial traits such as innovativeness, proactiveness, and risk taking. Therefore, there is a need to increase this awareness about the culture's essential role. In addition, this study highlighted the lack of

understanding the role of EOC and therefore, managers should take into consideration when implementing any practices in the future.

Finally, this study can also give some insights to public, manufacturing and service organizations in UAE and the region. For example, other police departments in other emirates can take this study as a guideline when striving for excellence. In other words, police departments whether in UAE or outside can have many practical benefits from this study. The extensive literature and arguments, and the results should be taken into consideration from other police departments to enhance their performance. In this study, the most important factors were discussed such as TQM, ERP, EO, Excellence, and EOC that are necessary nowadays for any organization wants to achieve success and competitive advantages. In some police departments, TQM practice was implemented but without having information system to link the whole departments, others have systems but not having strategies and practices such as TQM and EO. Therefore, the integration of these strategies and practices will help police departments to enhance their performance through implemented the suggested constructs in this study simultaneously. In addition, also other private companies can also have a great value from the findings of this study.

### **6.5 Limitations of the Study**

Despite the fact that, this study provides good insights and several contributions; there are still some limitations that should be considered when discussing the results of the study.

First, the scope of the present study was limited to Dubai Police officers only and not included other police departments in UAE or departments of Dubai Government. This

limitation can pertain generalizability of the results of the study. In addition, the unit of analysis in this study was head section officers in DP which replaced the role of managers. In addition, although the DP is one of the main public organizations in Dubai, it would be difficult to generalize the results on some public organizations and even to other private companies due to the technology advancement and leadership support.

Second, in the methodology part, this study followed a cross-sectional research design to examine the hypothesized relationships at a single point of time which considered as another limitation. The changes in the psychological human aspects could be changed from time to another. Based on that, the conclusion generated from this study could be different if the research design was longitudinal rather than cross-sectional study. In other words, a review of TQM, ERP, and EO revealed that they are long term strategies in nature. Therefore, studying the relationship between them at one point of time will lead to lacking the accuracy, and that is why it is strongly recommended that the longitudinal studies should be conducted to examine the effect of TQM, ERP, and EO on organizational performance.

Third, as the case of quantitative research methods, the respondents were requested to translate their perception based on statement in the survey questionnaire into numbers through Likert scale. These answers may be influenced by the biased perception of the situation (Macinati, 2008). Therefore, this study recommends that future research design should consider mixed research design. In other words, quantitative and qualitative research designs to be employed in the future research to complement each other.

Finally, another important limitation of the present study was the lack of other studies tackling the same factors in UAE. The lack of availability of these researchers limit the research's to compare the results with other studies in the same context. In other words, in the context of UAE there has been no researches previously examined the relationships of the constructs of this study; the researcher had to proceed in the study without have the advantages of other findings to be benchmarked or to be used in more explanations.

## **6.6 Suggestions for Future Research**

The current study provides many future research opportunities. Firstly, the data of this study was collected through a cross-sectional approach at a point of time. Due to the complex joint effect in the study strategies such as TQM, ERP, and EO on organizational excellence, EOC, and organizational performance, a longitudinal research could be extended. The longitudinal research approach could explain the complex relationship over long period of time and could explain better the variables development over time for the sake of detecting the changes the relationships between variables through the process.

Secondly, the previous limitation regarding the research design approach limited the researcher to observe the subsequently dynamic nature of the relationships and effect between the research's variables in long-term strategies. Therefore, to be able to examine the dynamic effect of TQM, ERP, and EO on organizational performance, case study approach could be considered as a better potential choice. This approach can enable the researcher to investigate in a deeper way on the complex relation between variables, and consequently the results could be different and provide insights into the potential successful factors.

Third, the effect of entrepreneurial organizational culture (EOC) was studied with EO and organizational performance to examine the mediating effect of EOC on entrepreneurial traits in the organization. In the future studies, the effect of EOC can be examined with TQM and ERP to explore further the importance of EOC as the basic step in the organizational change prior to any strategy implementation initiative.

Forth, the results of this study were based on the gathered data from head section officers in DP. However, they are the best authoritative representatives to answer and describe the TQM, ERP, EO, EOC, organizational excellence and their effect on organizational performance. In some future studies, these constructs could be evaluated by other respondents such as customers and employees.

Fifth, the limitation of generalizability that has been discussed previously can be improved by conducting more studies about the effect of TQM, ERO, and EO on organizational excellence and performance with the existing of EOC. Some studies can be conducted separately to focus more on each construct. In addition, the model of this study can be also more examined through data collected from all public organizations in Dubai Government. Moreover, some other studies can be conducted in UAE examining the same model in different sectors. Furthermore, this model can be also examined empirically using data collected from other countries in the region that have strong and unique cultural practices.

Finally, in chapter five, the R-square of organizational performance was 70%. This means that the model's variables contribute of 70% of organizational performance. Based on this result, we can conclude that there are some other variables that may increase the rate of performance which can be considered for future study.

## **6.7 Conclusion**

In conclusion, the public organizational performance will remain one of the main issues related to the development of the country. Therefore, the enhancement of the overall organizational performance of public organizations has been the attention of all managers and decision makers in the developing countries, including UAE. In the literature, it has been widely acknowledged the important role TQM, ERP, and EO as the most effective strategies that can assist organizations to enhance their performance and achieve competitive advantages over competitors. These strategies have been recognized in UAE in general and in Dubai in particular despite the short history of these practices and strategies in UAE.

However, the mixed results in this study of supporting or not supporting the proposed hypotheses, the impact of TQM, ERP, EO, and their dimensions confirmed their importance and significant effect on the organizational performance. In spite of the origin of these strategies as Western source, they can be helpful in developing countries for enhancing the organizational performance of the public organizations in UAE in general and Dubai Police in particular.

This study examined the mediating role of organizational excellence as a mechanism that can explain in a better way the relationship between TQM, ERP, and EO from one side and organizational performance from the other side. The results confirm that organizational excellence can enhance the role of TQM and EO to achieve higher organizational performance, however in the situation of ERP not confirmed. As a heart of excellence, innovation plays an important role in enhancing the organizational performance through implementing innovative strategies and practices such as TQM, ERP, and EO.

The role of entrepreneurial organizational culture (EOC) also has been examined in this study as a mediator between EO and organizational performance. The role of organizational culture in realizing the outcomes of organizational strategy has been receiving a growing attention in the entrepreneurship literature and quality management (Prajogo & Sohal, 2001). However the insignificant results of the mediating role of EOC due to some organizational reasons, culture remain as one of the important drivers in enhancing and succeeding the new implemented strategies and practices. The insignificant results comes a result of the lack of awareness among DP officers of the importance of EOC in the entrepreneurial activities and traits.

In summary, the results of this empirical study highlight new insights about how TQM, ERP, EO, EOC, and organizational excellence can improve the organizational performance of Dubai Police.

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